Statement of Basis
Hot Mix Asphalt Plant General Permit

Permit to Construct No. P-2011.0017
Project ID 61922

Central Paving Co., Inc. - 00085
Portable, Idaho

Facility ID 777-00085

Final

October 27, 2017
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Permit Writer

The purpose of this Statement of Basis is to satisfy the requirements of IDAPA 58.01.01.et seq, Rules for the Control of Air Pollution in Idaho, for issuing air permits.

ACRONYMS, UNITS, AND CHEMICAL NOMENCLATURE

AAC	acceptable ambient concentrations
AACC	acceptable ambient concentrations for carcinogens
acfm	actual cubic feet per minute
ASTM	American Society for Testing and Materials
BACT	Best Available Control Technology
BMP	best management practices
Btu	British thermal units
CAA	Clean Air Act
CAM	Compliance Assurance Monitoring
CEMS	continuous emission monitoring systems
cfm	cubic feet per minute
CFR	Code of Federal Regulations
CI	compression ignition
CMS	continuous monitoring systems
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	CO_2 equivalent emissions
COMS	continuous opacity monitoring systems
DEQ	Department of Environmental Quality
dscf	dry standard cubic feet
EL	screening emission levels
EPA	U.S. Environmental Protection Agency
GHG	greenhouse gases
gph	gallons per hour
gpm	gallons per minute
gr	grains (1 lb = 7,000 grains)
HAP	hazardous air pollutants
HHV	higher heating value
HMA	hot mix asphalt
hp	horsepower
hr/yr	hours per consecutive 12 calendar month period
ICE	internal combustion engines
IDAPA	a numbering designation for all administrative rules in Idaho promulgated in accordance with the Idaho Administrative Procedures Act
iwg	inches of water gauge
km	kilometers
lb/hr	pounds per hour
lb/qtr	pound per quarter
m	meters
MACT	Maximum Achievable Control Technology
mg/dscm	milligrams per dry standard cubic meter
MMBtu	million British thermal units
MMscf	million standard cubic feet
NAAQS	National Ambient Air Quality Standard
NESHAP	National Emission Standards for Hazardous Air Pollutants
NO_2	nitrogen dioxide
NO_X	nitrogen oxides
NSPS	New Source Performance Standards
O&M	operation and maintenance

O_2	oxygen
PAH	polyaromatic hydrocarbons
PC	permit condition
PCB	polychlorinated biphenyl
PERF	Portable Equipment Relocation Form
PM	particulate matter
$PM_{2.5}$	particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers
PM_{10}	particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers
POM	polycyclic organic matter
ppm	parts per million
ppmw	parts per million by weight
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PTC	permit to construct
PTC/T2	permit to construct and Tier II operating permit
PTE	potential to emit
PW	process weight rate
RAP	recycled asphalt pavement
RFO	reprocessed fuel oil
RICE	reciprocating internal combustion engines
Rules	*Rules for the Control of Air Pollution in Idaho*
scf	standard cubic feet
SCL	significant contribution limits
SIP	State Implementation Plan
SM	synthetic minor
SM80	synthetic minor facility with emissions greater than or equal to 80% of a major source threshold
SO_2	sulfur dioxide
SO_x	sulfur oxides
T/day	tons per calendar day
T/hr	tons per hour
T/yr	tons per consecutive 12 calendar month period
T2	Tier II operating permit
TAP	toxic air pollutants
TEQ	toxicity equivalent
T-RACT	Toxic Air Pollutant Reasonably Available Control Technology
ULSD	ultra-low sulfur diesel
U.S.C.	United States Code
VOC	volatile organic compounds
yd^3	cubic yards
$\mu g/m^3$	micrograms per cubic meter

FACILITY INFORMATION

Description

Central Paving, Inc. has proposed a modification of an existing portable source drum-mix asphalt plant. The asphalt plant consists of a counter-flow asphalt drum mixer equipped with a bag house to control particulate matter, an asphaltic oil storage tank with an electric heater, and materials transfer equipment.

Stockpile aggregate is transferred to feed bins. Aggregate may consist of up to 50% percent recycled asphalt pavement (RAP). Aggregate is dispensed from the bins onto feeder conveyors, which transfer the aggregate to the heated drum mixer. Aggregate travels through the rotating HMA drum mixer, and when dried, the aggregate is mixed with liquid asphalt cement. The resulting HMA is then conveyed to hot storage bins or silos until it can be loaded into trucks for transport off site. Other equipment may include a portable sand and gravel and crushed stone operation, which crushes rock and aggregate to reduce material in size to desired specifications. Electrical power will be supplied to the plant equipment from the local power grid while located at the Joplin site and from the local power grid or from portable generators when located away from the Joplin site.

Permitting History

The following information was derived from a review of the permit files available to DEQ. Permit status is noted as active and in effect (A) or superseded (S).

December 15, 1994	P-2011.0017, PTC Modification for RFO, & Generators, Permit status (S)
March 25, 2011	P-2011.0017, Project 60714, PTC Modification to add RFO as a fuel to drum dryer, allow for portability, to operate two generator sets, and to increase annual asphalt production from 110,000 tons to 350,000 tons, Permit Status (S)
June 24, 2011	P-2011.0017, PTC Modification to increase the sulfur content of the allowable fuel in the drum dryer at the Joplin site from 0.02% to 0.5%. All other locations throughout the state and fuel-burning equipment remain at 0.02% sulfur content (S).
February 22, 2012	P-2011.0017, PTC Modification to replace the dryer burner with a new, equivalent burner, change the drum dryer from a parallel flow drum to a counter flow drum, and replace the scrubber with a baghouse (A, but will become S upon issuance of this permit)

Application Scope

This PTC is for a minor modification at an existing minor facility.

The Applicant has purposed to increase the allowable sulfur content (by weight) of RFO from 0.02% to 0.1% for the asphalt drum dryer when located at sites other than the Joplin facility. The only increase in emissions will be to SO_2.

Application Chronology

July 21, 2017	DEQ received an application and application fee.
July 3 – July 18, 2017	DEQ provided an opportunity to request a public comment period on the application and proposed permitting action, no comment period was requested.
August 22, 2017	DEQ determined that the application was complete.
September 19, 2017	DEQ made available the draft permit and statement of basis for peer and regional office review.
September 26, 2017	DEQ made available the draft permit and statement of basis for applicant review.

October 4, 2017	DEQ met with applicant to discuss Facility Draft Comments
October 12, 2017	DEQ made available a revised draft permit and statement of basis for applicant review
October 24, 2017	DEQ received the permit processing fee.
October 27, 2017	DEQ issued the final permit and statement of basis.

TECHNICAL ANALYSIS

The asphalt production facility utilizes a baghouse for control of particulate matter emissions from the asphalt drum mixer. In addition, the Applicant will maintain Reasonable Control Methods or will use other emissions controls to minimize PM_{10} emissions from aggregate handling.

Emissions Units and Control Equipment

Table 1 Regulated Sources

Permit Section	Source	Control Equipment
1	Material Transfer Points: Materials handling Asphalt aggregate transfers Truck unloading of aggregate Aggregate conveyor transfers Aggregate handling	Reasonable Control Methods
2	Asphalt Drum Mixer: Manufacturer: CMI Model: UDM 1200R[a] Type: Counter-flow Manufacture Date: 2012 Max. production: 350 T/hr, 3,600 T/day, and 350,000/yr Fuel(s): Natural gas, Distillate #2 fuel oil, and used oil (RFO)	Asphalt Drum Mixer Baghouse: Manufacturer: Aesco Madsen Model: HRB-680 or equivalent Type: N/A Flow rate: N/A dscf PM_{10} control efficiency: N/A
	Asphaltic Oil Tank Heater: Electric Heater	None
3	Primary IC Engine: Manufacturer: John Deer Model: 405 TF275 or equivalent Manufacture Date: 2006 Max. power rating: 84 kW Fuel: distillate fuel oil ASTM Grades 1 and 2	None
	Secondary IC Engine: Manufacturer: Caterpillar Model: 3412 C-Dita or equivalent Manufacture Date: 2001 Max. power rating: 902 kW Fuel: distillate fuel oil ASTM Grades 1 and 2	None

a) "or equivalent" sources have an equivalent or less maximum capacity (T/hr and yd^3/hr) and fuel consumption (MMBtu/hr and gal/hr) than the source listed in this table; "or equivalent" sources and control methods shall not result in an emission increase or in the emission of any regulated air pollutant not previously emitted (using the definitions provided in IDAPA 58.01.01.006) when compared to the sources and control methods listed in this table.

Emissions Inventories

Potential to Emit

IDAPA 58.01.01 defines Potential to Emit as the maximum capacity of a facility or stationary source to emit an air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the facility or source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is state or federally enforceable. Secondary emissions do not count in determining the potential to emit of a facility or stationary source.

Using this definition of Potential to Emit an emission inventory specific only to SO_2 was developed for the asphalt drum dryer using the applicant developed HMA EI spreadsheet (see Appendix A and B). Emissions estimates of SO_2 were based on the following assumptions:

- Maximum asphalt throughput does not exceed 3,600 ton HMA/day, and 350,000 ton HMA/year (per the Applicant).
- Emissions from the asphalt drum dryer were based on the maximum emissions from using solely RFO in the drum dryer.

Pre-Project Potential to Emit

The following table presents the pre-project potential to emit for criteria pollutants from the drum dryer at the facility. These emissions were taken from the post-project potential to emit emissions inventory presented in the facility's last permitting projecting containing a change in emissions (Project No. 60870 June 24, 2011).

Table 2 PRE-PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Emissions Unit	PM_{10}		SO_2		NO_X		CO		VOC	
	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]
Point Sources										
Drum Dryer	**4.0**	**4.66**	**19.94**	**9.97**	**8.25**	**9.63**	**19.5**	**22.75**	**4.80**	**5.6**
Gen 1	**0.02**	**.03**	**0.0055**	**0.0078**	**0.42**	**0.58**	**0.32**	**0.44**	**0.1**	**0.14**
Gen 2	**0.73**	**1.03**	**0.12**	**0.17**	**12.2**	**17.1**	**15.13**	**21.18**	**1.75**	**2.45**
Pre-Project Totals	**4.75**	**5.72**	**20.07**	**10.15**	**20.87**	**27.31**	**34.95**	**44.37**	**6.65**	**8.19**

b) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
c) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Post Project Potential to Emit

The following table presents the post-project potential to emit for criteria pollutant from the asphalt drum dryer. The only increase in emissions resulting from this permitting project, as submitted by the Applicant and verified by DEQ staff, was for SO_2. See Appendix A and B for a detailed presentation of the calculations of SO_2 increase

Table 3 POST PROJECT POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

Emissions Unit	PM_{10}		SO_2		NO_X		CO		VOC	
	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]	lb/hr[a]	T/yr[b]
Point Sources										
Drum Dryer	**4.0**	**4.66**	**24.92**	**12.46**	**8.25**	**9.63**	**19.5**	**22.75**	**4.80**	**5.6**
Gen 1	**0.02**	**.03**	**0.0055**	**0.0078**	**0.42**	**0.58**	**0.32**	**0.44**	**0.1**	**0.14**
Gen 2	**0.73**	**1.03**	**0.12**	**0.17**	**12.2**	**17.1**	**15.13**	**21.18**	**1.75**	**2.45**
Post Project Totals	**4.75**	**5.72**	**25.05**	**12.64**	**20.87**	**27.31**	**34.95**	**44.37**	**6.65**	**8.19**

a) Controlled average emission rate in pounds per hour is a daily average, based on the proposed daily operating schedule and daily limits.
b) Controlled average emission rate in tons per year is an annual average, based on the proposed annual operating schedule and annual limits.

Change in Potential to Emit

The change in facility-wide potential to emit is used to determine if a public comment period may be required and to determine the processing fee per IDAPA 58.01.01.225. The following table presents the facility-wide change in the potential to emit for criteria pollutants.

Table 4 CHANGES IN POTENTIAL TO EMIT FOR REGULATED AIR POLLUTANTS

	PM_{10}		SO_2		NO_X		CO		VOC	
	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr	lb/hr	T/yr
Point Sources										
Pre-Project Potential to Emit	**4.75**	**5.72**	**20.07**	**10.15**	**20.87**	**27.31**	**34.95**	**44.37**	**6.65**	**8.19**
Post Project Potential to Emit	**4.75**	**5.72**	**25.05**	**12.64**	**20.87**	**27.31**	**34.95**	**44.37**	**6.65**	**8.19**
Changes in Potential to Emit	**0.00**	**0.00**	**4.98**	**2.49**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Ambient Air Quality Impact Analyses

As presented in the Modeling Memo in Appendix C, the estimated emission rates of SO_2, from this project exceeded applicable screening emission levels (EL) and published DEQ modeling thresholds established in IDAPA 58.01.01.585-586 and in the State of Idaho Air Quality Modeling Guideline[1]. Refer to the Emissions Inventories section for additional information concerning the emission inventories.

An ambient air quality impact analysis document has been crafted by DEQ based on a review of the modeling analysis submitted in the application. That document is part of the final permit package for this permitting action (see Appendix C).

As a result of this projects ambient air quality impact analysis, as well as information submitted by the Applicant for specific operating scenarios, it has been determined that the increase in the allowable sulfur content (by weight) of RFO from 0.02% to 0.1% for the asphalt drum dryer when located at sites other than the Joplin facility does not violate associated NAAQS limits and does not necessitate the inclusion of any new permit conditions or modification of current permit conditions (The applicant was primarily concerned if the increase in RFO sulfur content would change current set back distances or throughput limits). Accordingly, the following permit conditions have been retained from previous permitting projects.

- The Reduced Asphalt Production Limits permit condition.
- The Allowable Raw Materials permit condition.
- The Asphalt Operation Setback Distance Requirements permit condition.
- The Relocation Requirement permit condition.

REGULATORY ANALYSIS

Attainment Designation (40 CFR 81.313)

This modeling analysis for this facility demonstrates compliance with applicable standards in attainment areas. However, because a separate modeling analysis was not provided to demonstrate compliance with applicable standards in non-attainment areas, this portable facility is not permitted for operation in non-attainment areas. This requirement is assured by Permit Condition 2.6.

[1] Criteria pollutant thresholds in Table 1, State of Idaho Air Quality Modeling Guideline, Doc ID AQ-011, rev. 1, December 31, 2002.

Facility Classification

In a previous permit analysis for this facility (Project No. 60870, June 24 2011) it was determined that the facility classifies as a Synthetic Minor. Since that analysis an emissions increase has be proposed only under this permitting project. Table 4 data can be used to calculate total facility wide emission at 55.1 T/yr. Therefore, the facilities Potential to Emit for criteria pollutants is still below 80% of Major Source thresholds, and the facility continues to classify as a Synthetic Minor.

Permit to Construct (IDAPA 58.01.01.201)

IDAPA 58.01.01.201 Permit to Construct Required

The permittee has requested that a PTC be issued to the facility for the increase in the allowable sulfur content (by weight) of RFO from 0.02% to 0.1% for the asphalt drum dryer when located at sites other than the Joplin facility. Therefore, a permit to construct is required to be issued in accordance with IDAPA 58.01.01.220. This permitting action was processed in accordance with the procedures of IDAPA 58.01.01.200-228.

Tier II Operating Permit (IDAPA 58.01.01.401)

IDAPA 58.01.01.401 Tier II Operating Permit

The application was submitted for a permit to construct (refer to the Permit to Construct section), and an optional Tier II operating permit has not been requested. Therefore, the procedures of IDAPA 58.01.01.400–410 were not applicable to this permitting action.

Visible Emissions (IDAPA 58.01.01.625)

IDAPA 58.01.01.625 Visible Emissions

The sources of PM_{10} emissions at this facility are subject to the State of Idaho visible emissions standard of 20% opacity. This requirement is assured by Permit Conditions 3.5 and 4.3.

Fugitive Emissions (IDAPA 58.01.01.650)

IDAPA 58.01.01.650 Rules for the Control of Fugitive Emissions

The sources of fugitive emissions at this facility are subject to the State of Idaho fugitive emissions standards. These requirements are assured by Permit Conditions 2.1, 2.2, and 2.8.

Particulate Matter – New Equipment Process Weight Limitations (IDAPA 58.01.01.701)

IDAPA 58.01.01.701 Particulate Matter – New Equipment Process Weight Limitations

IDAPA 58.01.01.700 through 703 set PM emission limits for process equipment based on when the piece of equipment commenced operation and the piece of equipment's process weight (PW) in pounds per hour (lb/hr). IDAPA 58.01.01.701 and IDAPA 58.01.01.702 establish PM emission limits for equipment that commenced operation on or after October 1, 1979 and for equipment operating prior to October 1, 1979, respectively.

For equipment that commenced operation on or after October 1, 1979, the PM allowable emission rate (E) is based on one of the following four equations:

- IDAPA 58.01.01.701.01.a: If PW is $< 9{,}250$ lb/hr; $E = 0.045\ (PW)^{0.60}$
- IDAPA 58.01.01.701.01.b: If PW is $\geq 9{,}250$ lb/hr; $E = 1.10\ (PW)^{0.25}$

For equipment that commenced prior to October 1, 1979, the PM allowable emission rate is based on one of the following equations:

- IDAPA 58.01.01.702.01.a: If PW is $< 17{,}000$ lb/hr; $E = 0.045\ (PW)^{0.60}$
- IDAPA 58.01.01.702.01.b: If PW is $\geq 17{,}000$ lb/hr; $E = 1.12\ (PW)^{0.27}$

For the new asphalt drum mixer emissions unit proposed to be installed as a result of this project with a proposed throughput of 350 T/hr, E is calculated as follows:

Proposed throughput = 350 T/hr x 2,000 lb/1 T = 70,000 lb/hr

Therefore, E is calculated as:

$E = 1.12 \times PW^{0.27} = 1.12 \times (70{,}000)^{0.27} = 22.77$ lb-PM/hr

As presented in Table 2 of this projects PTC the post project PTE for this emissions unit is 9.5 lb-$PM_{10}/PM_{2.5}$ per hour. Assuming PM is 50% $PM_{10}/PM_{2.5}$ means that PM emissions will be 4.75 lb-PM/hr (9.5 lb- $PM_{10}/PM_{2.5}$ per hour ÷ 0.5 lb-$PM_{10}/PM_{2.5}$ per lb-PM). This is less than the calculated Rule requirement PM emissions rate of 22.77 lb-PM/hr. Therefore, compliance with this requirement has been demonstrated.

Rules for Control of Odors (IDAPA 58.01.01.775)

IDAPA 58.01.01.750 Rules for Control of Odors

Section 776.01 states that no person shall allow, suffer, cause, or permit the emission of odorous gases, liquids, or solids into the atmosphere in such quantities as to cause air pollution. These requirements are assured by Permit Conditions 2.7 and 2.11.

Rules for Control of Hot-Mix Asphalt Plants (IDAPA 58.01.01.805)

IDAPA 58.01.01.805 Rules for Control of Hot-Mix Asphalt Plants

The purpose of Sections 805 through 808 is to establish for hot-mix asphalt plants restrictions on the emission of particulate matter.

Section 806 states that no person shall cause, allow or permit a hot-mix asphalt plant to have particulate emissions which exceed the limits specified in Sections 700 through 703. As demonstrated previously, these requirements have been met by the proposed PM_{10} emissions rate (see Section on Particulate Matter – New Equipment Process Weight Limitations).

Section 807 states that in the case of more than one stack to a hot-mix asphalt plant, the emission limitation will be based on the total emission from all stacks. The proposed facility only has one stack for emissions from the asphalt drum dryer so there is no need to combine emissions limits from multiple stacks into one stack as required.

Section 808.01 requires fugitive emission controls as follows: No person shall cause, allow or permit a plant to operate that is not equipped with an efficient fugitive dust control system. The system shall be operated and maintained in such a manner as to satisfactorily control the emission of particulate material from any point other than the stack outlet.

Section 808.02 requires plant property dust controls as follows: The owner or operator of the plant shall maintain fugitive dust control of the plant premises and plant owned, leased or controlled access roads by paving, oil treatment or other suitable measures. Good operating practices, including water spraying or other suitable measures, shall be employed to prevent dust generation and atmospheric entrainment during operations such as stockpiling, screen changing and general maintenance.

These requirements are assured by Permit Conditions 2.1 and 2.2.

Title V Classification (IDAPA 58.01.01.300, 40 CFR Part 70)

IDAPA 58.01.01.301 Requirement to Obtain Tier I Operating Permit

Post project facility-wide emissions from this facility do not have a potential to emit greater than 100 tons per year for PM_{10}, SO_2, NO_X, CO, VOC, and HAP or 10 tons per year for any one HAP or 25 tons per year for all HAP combined as demonstrated previously in the Emissions Inventories Section of this analysis. Therefore, the facility is not a Tier I source in accordance with IDAPA 58.01.01.006 and the requirements of IDAPA 58.01.01.301 do not apply.

PSD Classification (40 CFR 52.21)

40 CFR 52.21 Prevention of Significant Deterioration of Air Quality

The facility is not a major stationary source as defined in 40 CFR 52.21(b)(1), nor is it undergoing any physical change at a stationary source not otherwise qualifying under paragraph 40 CFR 52.21(b)(1) as a major stationary source, that would constitute a major stationary source by itself as defined in 40 CFR 52. Therefore in accordance with 40 CFR 52.21(a)(2), PSD requirements are not applicable to this permitting action. The facility is/is not a designated facility as defined in 40 CFR 52.21(b)(1)(i)(a), and does not have facility-wide emissions of any criteria pollutant that exceed 250 T/yr.

NSPS Applicability (40 CFR 60)

Because the facility produces asphalt are applicable:

- 40 CFR 60, Subpart I - National Standards of Performance for Hot Mix Asphalt Plants

DEQ has been delegated authority to this subpart.

Those sections that are applicable are highlighted.

40 CFR 60, Subpart I **National Standards of Performance for Hot Mix Asphalt Plants**

This permitting action is for a new asphalt plant. Therefore, the requirements of this subpart may apply.

§ 60.90 Applicability and designation of affected facility

In accordance with §60.90(a), each hot mix asphalt facility is an affected facility. In accordance with §60.90(b), any hot mix asphalt facility that commences construction or modification after June 11, 1973 is subject to the requirements of Subpart I.

The affected facility includes: the dryer; systems for screening, handling, storing, and weighing hot aggregate; systems for loading, transferring, and storing mineral filler; systems for mixing hot mix asphalt; and the loading, transfer, and storage systems associated with emission control systems.

§ 60.91 Definitions

This section contains the definitions of this subpart.

§ 60.92 Standard for particulate matter

In accordance with §60.92, no owner or operator shall discharge or cause the discharge into the atmosphere from any affected facility any gases which contain particulate matter in excess of 0.04 gr/dscf or exhibit 20% opacity or greater. Permit Condition 3.4 includes the requirements of this section.

§ 60.93 Test methods and procedures

In accordance with §60.93(a), performance tests shall use as reference methods and procedures the test methods in Appendix A of 40 CFR 60.

In accordance with §60.93(b), compliance with the particulate matter standards shall be determined by EPA Reference Method 5, and opacity shall be determined by EPA Reference Method 9. Permit Conditions 3.12 and 3.13 includes the requirements of this section. Per the information submitted by the Applicant (see the application, Appendix C "Source Test April 29, 2017), the initial Subpart I source test has been performed on this asphalt plant. Therefore, no initial Subpart I source test is required of this asphalt plant.

DEQ has been delegated authority to this subpart.

40 CFR 60, Subpart IIII — **Standards of Performance for Stationary Compression Ignition Internal Combustion Engines**

The facility is not subject to 40 CFR 60, Subpart IIII as IC Engines meet the definition of Non-road Engine per 40 CFR 1068.30

40 CFR 63, Subpart ZZZZ — **National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines**

The facility is not subject to 40 CFR 63, Subpart ZZZZ as IC Engines meet the definition of Non-road Engine per 40 CFR 1068.30

NESHAP Applicability (40 CFR 61)

The facility is not subject to any NESHAP requirements in 40 CFR 61.

MACT Applicability (40 CFR 63)

The facility is not subject to any MACT requirements in 40 CFR 63 as IC Engines meet the definition of Non-road Engine per 40 CFR 1068.30

Permit Conditions Review

Formatting of current Idaho DEQ HMA general permits has changed since last permit revision. Under new format permit organization and permit conditioning numbering has changed. All permit conditions are described below. However, only where an existing permit condition's content (as opposed to solely organization or condition numbering) has been significantly added to, revised, modified or deleted will the existing permitting condition be listed and/or the differences vs new permit conditions content be addressed

Existing Permit Condition 9

In accordance with IDAPA 58.01.01.650-651 and IDAPA 58.01.01.808, all reasonable precautions shall be taken to prevent PM from becoming airborne. In determining what is reasonable, consideration will be given to factors such as the proximity of dust emitting operations to human habitations and/or activities and atmospheric conditions that might affect the movement of particulate matter (PM). Some of the reasonable precautions include, but are not limited to, the following:

- *Good operating practices, including water spraying or other suitable measures, shall be employed to prevent dust generation and atmospheric entrainment during operations such as aggregate stockpiling, scalping screen changing and general maintenance.*
- *Use, where practical, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of lands.*
- *Application, where practical, of asphalt, oil, water, or suitable chemicals to, or covering of, dirt roads, material stockpiles, and other surfaces which can create dust.*
- *Installation and use, where practical, of hoods, fans, and fabric filters or equivalent systems to enclose and vent the handling of dusty materials. Adequate containment methods should be employed during sandblasting or other operations.*
- *Covering, where practical, of open bodied trucks transporting materials likely to give rise to airborne dusts.*
- *Paving of roadways and their maintenance in a clean condition, where practical.*

- *Prompt removal of earth or other stored material from streets, where practical.*

New Permit Condition 2.1

In accordance with IDAPA 58.01.01.650-651, all reasonable precautions shall be taken to prevent particulate matter from becoming airborne.

The permittee shall monitor and maintain records of the frequency and the method(s) used (e.g., water, chemical dust suppressants) to reasonably control fugitive dust emissions.

The permittee shall maintain records of all fugitive dust complaints received. The permittee shall take appropriate corrective action as expeditiously as practicable after receipt of a valid complaint. The records shall include, at a minimum, the date that each complaint was received and a description of the following: the complaint, the permittee's assessment of the validity of the complaint, any corrective action taken, and the date the corrective action was taken.

The permittee shall conduct a daily facility-wide inspection of potential sources of fugitive dust emissions, during daylight hours and under normal operating conditions to ensure that the methods used to reasonably control fugitive dust emissions are effective. If fugitive dust emissions are not being reasonably controlled, the permittee shall take corrective action as expeditiously as practicable. The permittee shall maintain records of the results of each fugitive dust emissions inspection. The records shall include, at a minimum, the date of each inspection and a description of the following: the permittee's assessment of the conditions existing at the time fugitive emissions were present (if observed), any corrective action taken in response to the fugitive dust emissions, and the date the corrective action was taken

New Permit Condition 2.2

In accordance with IDAPA 58.01.01.808.01 and 808.02, the asphalt plant shall employ efficient fugitive dust controls. The control shall be employed and maintained in such a manner as to satisfactorily control the emission of particulate material from any point other than a stack outlet. These controls include, but are not limited to the:

- *Good operating practices, including water spraying or other suitable measures, shall be employed to prevent dust generation and atmospheric entrainment during operations such as aggregate stockpiling, scalping screen changing and general maintenance.*
- *Use, where practical, of water or chemicals for control of dust in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of lands.*
- *Application, where practical, of asphalt, oil, water, or suitable chemicals to, or covering of, dirt roads, material stockpiles, and other surfaces which can create dust.*
- *Installation and use, where practical, of hoods, fans, and fabric filters or equivalent systems to enclose and vent the handling of dusty materials. Adequate containment methods should be employed during sandblasting or other operations.*
- *Covering, where practical, of open bodied trucks transporting materials likely to give rise to airborne dusts.*
- *Paving of roadways and their maintenance in a clean condition, where practical.*
- *Prompt removal of earth or other stored material from streets, where practical.*

The current permit condition has been split and updated into two new permit conditions. The new permit conditions match current HMA general permit requirement/conditions and include additional requirements to complaint reporting. Additionally, bulleted list of fugitive control activities has been carried over from bulleted list in current permit condition.

New Permit Condition 2.3 establishes that the asphalt plant may collocate with one rock crushing plant and shall not locate with 1,000 ft. of another rock crushing plant, any other asphalt plant, or a concrete batch plant as requested by the Applicant.

New Permit Condition 2.4 establishes that the permittee notify DEQ when the permitted portable equipment is relocated. This requirement is based upon imposing reasonable permit conditions for portable asphalt plants.

New Permit Condition 2.5 remains unchanged from its counterpart, current permit condition 14.This permit condition specifies the relocation requirements of Non-road IC engines in order to maintain their status as Non-road engines. The Joplin site is excluded as the operation of IC engines is prohibited there.

Current Permit Condition 31

The permittee shall not relocate and operate away from the Joplin site any source listed in Table 1 in a PM2.5 or PM10 nonattainment area.

The location and boundaries of nonattainment areas in Idaho may be found at the DEQ website or by contacting DEQ.

New Permit Condition 2.6

The permittee shall not relocate and operate away from the Joplin site any source listed in Table 1.1 in a nonattainment area.

This updated permit condition establishes a restriction on locating the portable asphalt plant to non-attainment areas. The new permit condition differs from the current permit condition in that relocation at any non-attainment area is prohibited not just PM10 or PM2.5 non-attainment areas. This change is based upon parameters used during the ambient air quality modeling analysis performed for this project. Modeling analysis in any non-attainment area, regardless of source pollution, was not considered.

New Permit Condition 2.7 establishes that there are to be no emissions of odorous gases, liquids, or solids from the permit equipment into the atmosphere in such quantities that cause air pollution.

New Permit Condition 2.8 establishes that the permittee shall monitor fugitive dust emissions on a daily basis to demonstrate compliance with the facility-wide permit requirements.

New Permit Condition 2.9 establishes that the permittee measure and record the distances to equipment that will be collocated with the asphalt plant to demonstrate compliance with the Collocation Restrictions permit condition. In addition the new permit condition includes an accuracy margin of plus or minus six feet as is standard for current HMA plant general permits.

New Permit Condition 2.10 establishes that the permittee record the date and location of the HMA plant each time it is relocated to demonstrate compliance with the Relocation Restriction permit condition.

New Permit Condition 2.11 establishes that the permittee monitor and record odor complaints to demonstrate compliance with the facility-wide permit requirements.

New Permit Condition 2.12 establishes that the permittee shall maintain records as required by the Recordkeeping General Provision.

Asphalt Production Equipment

New Permit Condition 3.1 provides a process description of the asphalt production process at this facility.

New Permit Condition 3.2 provides a description of the control devices used on the asphalt production equipment at this facility.

New Permit Condition 3.3 establishes hourly and annual emissions limits for $PM_{2.5}$, SO_2, NO_X, CO, and VOC emissions from the asphalt production operation at this facility.

Existing Permit Condition 19

Each week that an emission source listed in Table 1 is operated, the permittee shall conduct a site wide inspection of potential sources of visible emissions to ensure compliance with Permit Condition 8. Each inspection shall take place during daylight hours and under normal operating conditions. The inspection shall consist of a see/no see evaluation for each emission source. If any visible emissions are present from any point source of emissions, the permittee shall either take appropriate corrective action as expeditiously as practicable, or perform a Method 9 opacity test in accordance with the procedures outlined in IDAPA 58.01.01.625. A minimum of 30 observations shall be recorded when conducting the opacity test. If opacity is greater than 20% for a period or periods aggregating more than three minutes in any 60 minute period, the permittee shall take all necessary corrective action and report the exceedance in accordance with IDAPA 58.01.01.130-136.

The permittee shall maintain records of the results of each visible emissions inspection and each Method 9 test when conducted. The records shall include, at a minimum, the date and results of each inspection and test and a description of the following: the permittee's assessment of the conditions existing at the time visible emissions are present (if observed), any corrective action taken in response to the visible emissions, and the date corrective action was taken.

This permit condition was removed as it is no longer standard for current HMA general permit. In addition opacity limits are covered in new permit by conditions 3.4 and 3.5.

New Permit Condition 3.4 incorporates the particulate matter and opacity standards of 40 CFR 60, Subpart I – Standards of Performance for Hot Mix Asphalt Plants.

New Permit Condition 3.5 establishes a 20% opacity limit for the asphalt drum mixer baghouse stack, the asphaltic oil tank heater stack, the load-out station stack(s), and the silo filling slat conveyor stacks or functionally equivalent openings associated with the asphalt production operation.

New Permit Condition 3.6 establishes a daily, and an annual asphalt production limit for the asphalt production operation as proposed by the Applicant.

New Permit Condition 3.7 establishes a daily asphalt production limit for the asphalt production operation when operated on days when a collocated portable rock crusher is operated. This requirement was based upon the air quality modeling analysis performed for this application.

New Permit Condition 3.8 establishes limits for the raw materials used in the asphalt production operation as proposed by the Applicant.

Current Permit Condition 11

Production and Setback Distance Limits

When operating away from the Joplin site, the permittee shall comply with the minimum setback distances listed in Table 3 and the daily production rates shall not exceed the values shown in Table 3. The minimum setback shall be defined as the minimum distance from the nearest edge of any emissions source listed in Table 1 to any area outside of a building where the general public has access.

The annual production rate shall not exceed 350,000 tons per any consecutive 12-month period.

The HMA plant shall process only aggregate, asphalt cement, and/or recycled asphalt cement (RAP) as raw materials. RAP used as part of the aggregate shall not exceed 50 percent by weight of the aggregate.

TABLE 1 STATEWIDE PRODUCTION LIMITS AND SETBACKS

Operating Scenario Description	Production Limits	Setback Distance[a] (meters)

HMA and Generators while not operating during the same day as a co-located crusher	Daily HMA production limit	3,600 T/day[b]	80
HMA and Generators while operating during the same day as a co-located[c] crusher	Daily HMA production limit	1,800 T/day[b]	80

c) Setback as defined in Permit Condition 11.
d) T/day is tons of material processed per calendar day.
e) Co-located as defined in Permit Condition 30.

New Permit Condition 3.9

The permittee shall maintain the following minimum setback distances from the leased or owned property boundary to the asphalt drum mixer baghouse exhaust stack:

- *177 (± 6 feet) feet when operating at the Joplin site.*
- *262 feet (± 6 feet) when operating at any other site statewide, other than the Joplin site.*

This updated permit condition establishes setback distance restrictions for the asphalt production operation when at and away from the Joplin site. The setback distances restrictions are based upon the results of the previous Ambient Air Quality Modeling Analysis performed and were established to comply with 24-hr PM_{10} NAAQS. This permitting project's Ambient Air Quality Modeling Analysis only looked at applicable pollutants with an emission increase, namely SO2. The results indicated an increase in setback due to SO2 emissions increase is not required. Additionally setback units have been converted from meters to ft.

In addition, in order to resolve conflicting definitions (see Current Permit Condition 23 below) the clause defining setback has been modified in this new permit condition. The language of the new permit condition follows standard HMA plant general permit standards and requires setback to be measured as "...distances from the leased of owned property boundary to the asphalt rum mixer baghouse exhaust stack...". Under current permit definition, the applicant was interpreting setback as the distance from the nearest edge of any emission point to the nearest building outside of the facility property/operating boundary. Current permit condition language dates back to the March 25, 2011 issued PTC for this facility (project 60714). After a review of the prior permitting action, including the statement of basis and modeling memorandum, it was determined that the intent of the current permit condition was to define setback as the "closest distance from a pollutant emission point to the property boundary. This is supported by the permitting project's modeling memo. In that memo, and as is standard, set back is defined as the "closest distance from a pollutant emission point to the property boundary". Additionally, the memo discusses the need for this interpretation as it meets ambient air quality standards with ambient air being defined as "any area where the general public (anyone not under the direct control of the HMA plant) has access".

New Permit Condition 3.10 establishes that a baghouse be used to control emissions from the asphalt drum mixer as proposed by the Applicant. A similar condition does not exist in existing permit. This condition has been added to conform to current standard for HMA general permit.

Current Permit Conditions 17

> *The permittee shall not use any fuel oil containing more than 0.5% sulfur by weight in the Asphalt Drum Dryer when operating at the Joplin Site location. All other units shall not exceed 0.02% sulfur by weight. For Statewide operations (other than the Joplin Site location), the permittee shall not use any fuel oil containing more than 0.02% sulfur by weight.*

New Permit Condition 3.11

> *The permittee shall not use any fuel oil (including distillate and RFO) containing more than 0.5% sulfur by weight in the Asphalt Drum Dryer when operating at the Joplin Site location. For Statewide operations (other than the Joplin Site location), the permittee shall not use any fuel oil containing more than 0.1% sulfur by weight in the Asphalt Drum Dryer.*

This permit condition was updated to include applicant requested allowable RFO sulfur content increased from 0.02% to 0.1% for use in the drum dryer at operation sites other than the Joplin site. As SO_2 emission from fuel oils are primarily driven by sulfur content and DEQ developed HMA emissions calculated spreadsheet lists equal emission factors for distillate fuel vs RFO, the allowable sulfur content of distillate fuel for use in the drum dryer has also been increased to 0.1%.

New Permit Condition 3.12 establishes fuel use restrictions for combustion in the asphalt drum mixer based upon 40 CFR 279.11. These fuel use restrictions were based on the fuels proposed by the Applicant to be combusted in the asphalt drum mixer.

New Permit Condition 3.13 establishes $PM_{2.5}$ and opacity performance testing requirements required by DEQ on asphalt plants located in the state of Idaho.

New Permit Condition 3.14 establishes $PM_{2.5}$ and opacity performance testing methods and procedures required by DEQ on asphalt plants located in the state of Idaho. This condition includes updated procedures from what is specified in current permit to meet IDEQ standards for HMA plant general permits

New Permit Condition 3.15 establishes $PM_{2.5}$ and opacity performance testing recordkeeping required by DEQ on asphalt plants located in the state of Idaho. This condition includes updated procedures from what is specified in current permit to meet IDEQ standards for HMA plant general permits

Current Permit Condition 21

Each day that the HMA dryer is operated, the permittee shall monitor and record the daily production to demonstrate compliance with the relevant daily production limit.

Each month the permittee shall monitor and record the monthly and annual production of the HMA dryer to demonstrate compliance with the relevant annual production limit. Annual production shall be determined by summing each monthly production total over the previous consecutive 12-calendar month period.

For each mix when RAP is used as part of the aggregate, the permittee shall monitor and record the tons of RAP used and the tons of aggregate mixed with RAP to demonstrate compliance with the RAP aggregate limit.

New Permit condition 3.16

For each day that the asphalt drum mixer is operated the Permittee shall maintain the following records:

> *The amount of asphalt produced in tons per day to demonstrate compliance with the daily Asphalt Production Limits permit conditions.*

Monthly asphalt production shall be determined by summing daily production over the previous calendar month. Consecutive 12-months of asphalt production shall be determined by summing the monthly production over the previous consecutive 12 month period to demonstrate compliance with the consecutive 12-months Asphalt Production Limits permit condition.

New Permit Condition 3.17

For each day that the asphalt drum mixer is operated using RAP, the Permittee shall record the amount of RAP used and the total weight of asphalt produced, either on a daily or per batch basis, to demonstrate compliance with the Allowable Raw Materials permit condition.

The weight percentage of RAP used shall be calculated as follows:

Weight percentage of RAP = RAP material used (either per daily or per batch, tons-RAP) ÷ total asphalt produced (either per day or per batch, tons-asphalt) x 100

Current permit condition 21 was split into two new permit conditions 3.16 and 3.17. New permit condition 3.16 establishes that the Permittee monitor and record hourly and daily asphalt production to demonstrate compliance with the Asphalt Production Limits permit condition.

New permit condition 3.17 establishes that the Permittee calculate and record RAP use to demonstrate compliance with the Allowable Raw Materials permit condition. In addition, condition 3.17 provides greater detail on RAP monitoring procedures yet still allows for monitoring on a daily or batch basis to account for continuous or batch style production HMA plants.

Current Permit Condition 23

Setback distance shall be defined as the minimum distance between each source listed in Table 1 and the established facility boundary (ambient air).

The permittee shall physically measure and record the minimum setback distance to demonstrate compliance with the setback distance limit when operating away from the Joplin site. Setback distance shall be measured:

- *Before initial startup of any emission source listed in Table 1.*
- *Each time any emissions source listed in Table 1 is relocated in accordance with IDAPA 58.01.01.500; and*
- *Each time an emissions source listed in Table 1 is moved in such a way that the setback distance of the emission source changes.*

Information recorded shall include, but not be limited to, a brief description of the nearest distance to any area where the general public has access, and the minimum setback distance in meters or feet to an accuracy of plus or minus 1.8 meters or 6 feet.

New Permit Condition 3.18

The permittee shall measure and record the distance, to an accuracy of plus or minus six feet, between the leased or owned property boundary and the asphalt drum mixer baghouse exhaust stack each time the asphalt drum mixer baghouse is moved to demonstrate compliance with the Asphalt Operation Setback Distance Requirements permit condition. In addition, the permittee shall record whether the site has line power or is using the IC engines to generate power at the site.

This permit condition has been updated to current standard for HMA general permit. Most noticeably setback distance recordkeeping is required for all operating sites, not just sites away from Joplin site as current permit condition states. In the current permit, the Joplin site is covered under its own sub section and permit conditions. Since the new permit does not have a similar Joplin site subsection, setback distance has been covered in this new permit condition.

In addition, the new permit condition's definition of setback matches that of new permit condition 3.9. Under current permit, the counterpart conditions 11 and 23 contain differing definitions of setback.

New Permit condition 3.19 establishes that the Permittee shall establish procedures for operating the baghouse. This is a DEQ imposed standard requirement for operations using baghouses to control particulate emissions.

New Permit condition 3.20 establishes that the Permittee shall establish procedures for operating the asphalt drum dryer. This permit condition was imposed from the results of a T-RACT analysis performed as part of a previous permitting project (Proj No. 60714 March 25, 2011).

New Permit condition 3.21 establishes that the permittee monitor distillate fuel oil shipments to demonstrate compliance with operating permit requirements.

New Permit condition 3.22 establishes that the permittee monitor used oil fuel shipments to demonstrate compliance with the used oil fuel requirements of the permit.

New Permit Condition 3.23 establishes that the permittee shall maintain records as required by the Recordkeeping General Provision.

New Permit Condition 3.24 establishes that the permittee shall submit the results of the performance tests to the appropriate DEQ office.

New Permit condition 3.25 establishes that the federal requirements of 40 CFR Part 60, Subpart I – Standards of Performance for Hot Mix Asphalt Plants, are incorporated by reference into the requirements of this permit per current DEQ guidance.

New Permit Condition 3.26 incorporates 40 CFR 60, Subpart A – General Provisions.

Internal Combustion Engines

New Permit condition 4.1 provides a process description of the IC engines process at this facility.

New Permit condition 4.2 provides a description of the control devices used on the IC engines at this facility.

As discussed previously, Permit Condition 4.3 establishes a 20% opacity limit for the Primary IC Engine and the Secondary IC Engine exhaust stacks or functionally equivalent openings associated with the asphalt production operation.

New Permit Condition 4.4 establishes that the combined daily operation of IC engines not exceed 24 hours per calendar day. While Permit Condition 4.5 establishes that the secondary IC engine shall not operate for more than 16 hours per calendar day. Limits on the hours of operation of the generators were placed to be consistent with the emission inventory that was used to demonstrate compliance with ambient standards and toxic increments.

New Permit Condition 4.6 establishes fuel use restrictions for combustion in the Primary IC Engine and the Secondary IC Engine. These fuel use restrictions were based on the fuel proposed by the Applicant to be combusted in the Primary IC Engine and the Secondary IC Engine during a previous permitting action. The current permitting project incorporates only a fuel increase for use in the drum dryer per applicant request.

New Permit Condition 4.7 establishes that the Primary as well as Secondary IC engines will not be operated at the Joplin Site. This condition was based on modeling analysis from a previous permitting project.

New Permit Condition 4.8 establishes that the Primary and Secondary IC Engines will meet the definition of Non-road Engine per 40 CFR 1068.30. This is significant as under this definition 40 CFR 63 Subpart ZZZZ and 40 CFR 60 Subpart IIII do not apply.

New Permit Condition 4.9 Establishes relocation requirements for the Primary and Secondary IC Engines as defined as Non-road Engines. Joplin site is excluded as IC Engines may be stored for more than 12 months at that site but not ever operated.

New Permit condition 4.10 establishes that the permittee monitor and record daily operation of the Primary IC Engine to demonstrate compliance with the Primary IC Engine Operating Limits permit condition.

New Permit condition 4.11 establishes that the permittee monitor and record daily operation of the Secondary IC Engine to demonstrate compliance with the Secondary IC Engine Operating Limits permit condition.

New Permit Condition 4.12 establishes that the permittee shall maintain records as required by the Recordkeeping General Provision.

PUBLIC REVIEW

Public Comment Opportunity

An opportunity for public comment period on the application was provided in accordance with IDAPA 58.01.01.209.01.c or IDAPA 58.01.01.404.01.c. During this time, there were no comments on the application and there was not a request for a public comment period on DEQ's proposed action. Refer to the chronology for public comment opportunity dates.

APPENDIX A – EMISSION INVENTORY 0.02% SO_2

Facility: Central Paving Co., Inc.
7/19/2017 11:54 **Permit/Facility ID:** P-2011.0017 777-00086

EMISSION INVENTORY
POUNDS PER HOUR

Max Controlled Emissions of Any Pollutant from Drum Mix HMA Plant Fabric Filter, Tank Heater, Generator, Silo Fill/Load-out

A. Drum Mix Plant: 350 Tons/hour 1,000 Hours/year 350,000 Tons/year 3,500 Tons/day
Maximum emission for each pollutant from any fuel-burning options selected on "Facility Data" worksheet. Fuels Selected = Used Oil 0 hrs/day
B. Tank Heater: 0.0800 MMBtu/hr 4,000 Hours/year 0 hrs/day
Maximum emission for each pollutant for heater burning any fuel selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil 0 hrs/day
G1. IC Engine 1: 0.00 gal/hour 0 Hours/year IC Engine < 600hp #2 Fuel Oil 0 hrs/day
G2. IC Engine 2: 0.00 gal/hour 0 Hours/year IC Engine > 600hp

Pollutant	A Drum Mix Max Emission Rate for Pollutant (lb/hr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (lb/hr)	C IC Engine 1 + IC Engine 2 Max Emission Rate for Pollutant (lb/hr)	D Load-out & Silo Filling Emission Rate for Pollutant (lb/hr)	E TOTAL of Max Emission Rates from A, B, C & D (lb/hr)
PM (total)	11.55	0.00E+00	0.00E+00	3.88E-01	11.94
PM-10 (total)	8.05	0.00E+00	0.00E+00	3.88E-01	8.44
PM-2.5	7.81	0.00E+00	0.00E+00	3.88E-01	8.19
CO	40.60	0.00E+00	0.00E+00	8.85E-01	40.39
NOx	10.26	0.00E+00	0.00E+00		10.25
SO_2	1.25	0.00E+00	0.00E+00		1.25
VOC	11.20	0.00E+00	0.00E+00	1.41E+00	12.61
Lead	6.25E-03	0.00E+00	0.00E+00		6.25E-03
HCl*	7.35E-02	0.00E+00	0.00E+00		7.35E-02
Dioxins*					
2,3,7,8-TCDD	8.39E-12				8.39E-12
Total TCDD	3.72E-11				3.72E-11
1,2,3,7,8-PeCDD	1.24E-11				1.24E-11
Total PeCDD	9.79E-10				9.79E-10
1,2,3,4,7,8-HxCDD	1.88E-11	0.00E+00			1.88E-11
1,2,3,6,7,8-HxCDD	5.19E-11				5.19E-11
1,2,3,7,8,9-HxCDD	3.92E-11	0.00E+00			3.92E-11
Total HxCDD	4.78E-10				4.78E-10
1,2,3,4,6,7,8-HpCDD	1.02E-10	0.00E+00			1.02E-10
Total HpCDD	7.65E-10	0.00E+00			7.65E-10
Octa CDD	9.99E-10	0.00E+00			9.99E-10
Total PCDDs*	3.16E-09	0.00E+00			3.16E-09
Furans*					
2,3,7,8-TCDF	3.88E-11				3.88E-11
Total TCDF	1.48E-10	0.00E+00			1.48E-10
1,2,3,7,8-PeCDF	1.72E-10				1.72E-10
2,3,4,7,8-PeCDF	3.56E-11				3.56E-11
Total PeCDF	3.36E-09	0.00E+00			3.36E-09
1,2,3,4,7,8-HxCDF	1.60E-10				1.60E-10
1,2,3,6,7,8-HxCDF	4.79E-11				4.79E-11
1,2,3,7,8,9-HxCDF	7.69E-11				7.69E-11
1,2,3,4,6,7,8-HpCDF	3.36E-10				3.36E-10
Total HxCDF	6.19E-10	0.00E+00			6.19E-10
1,2,3,4,6,7,8-HpCDF	2.60E-10				2.60E-10
1,2,3,4,7,8,9-HpCDF	1.06E-10				1.06E-10
Total HpCDF	4.00E-10	0.00E+00			4.00E-10
Octa CDF	1.92E-10	0.00E+00			1.92E-10
Total PCDF*	1.80E-09	0.00E+00			1.80E-09
Total PCDD/PCDF*	4.79E-09	0.00E+00	0.00E+00		4.79E-09
Non-PAH HAPs					
Acetaldehyde*	5.19E-02		0.00E+00		5.19E-02
Acrolein*	3.90E-03		0.00E+00		3.90E-03
Benzene*	1.35E-02	0.00E+00	0.00E+00	2.42E-04	1.38E-02
1,3-Butadiene*			0.00E+00		0.00E+00
Ethylbenzene*	3.80E-02			2.44E-03	3.84E-02
Formaldehyde*	1.24E-01	0.00E+00	0.00E+00	3.51E-03	1.27E-01
Hexane*	1.38E-01	0.00E+00		2.76E-03	1.41E-01
Isooctane	6.00E-03			1.60E-05	6.02E-03
Methyl Ethyl Ketone*	3.00E-03			1.02E-03	4.02E-03
Pentane*		0.00E+00			0.00E+00
Propionaldehyde*	1.95E-02				1.95E-02
Quinone*	2.40E-02				2.40E-02
Methyl chloroform*	7.20E-03				7.20E-03
Toluene*	4.35E-01	0.00E+00	0.00E+00	2.44E-03	4.37E-01
Xylene*	3.00E-02		0.00E+00	1.22E-02	4.22E-02
POM (7-PAH Group)*	2.19E-05	0.00E+00	0.00E+00	4.84E-05	6.73E-05
TOTAL PAH HAPs	3.54E-02	0.00E+00	0.00E+00	1.97E-03	3.73E-02

Pollutant	A Drum Mix Max Emission Rate for Pollutant (lb/hr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (lb/hr)	C IC Engine IC1 + IC2 Max Emission Rate for Pollutant (lb/hr)	D Load-out & Silo Filling Emission Rate for Pollutant (lb/hr)	E TOTAL of Max Emission Rates from A, B, C & D (lb/hr)
PAH HAPs					
2-Methylnaphthalene	0.79E-03	0.00E+00		8.59E-04	7.65E-03
3-Methylchloranthrene *	0.00E+00	0.00E+00			0.00E+00
Acenaphthene	5.59E-05	0.00E+00	0.00E+00	8.31E-05	1.39E-04
Acenaphthylene	8.70E-04	0.00E+00	0.00E+00	8.23E-05	9.84E-04
Anthracene	1.24E-04	0.00E+00	0.00E+00	2.27E-05	1.47E-04
Benz(a)anthracene *	8.39E-06	0.00E+00	0.00E+00	8.27E-06	1.67E-05
Benzo(a)pyrene *	3.92E-07	0.00E+00	0.00E+00	3.13E-07	7.05E-07
Benzo(b)fluoranthene *	4.00E-06	0.00E+00	0.00E+00	1.04E-06	5.03E-06
Benzo(e)pyrene	4.39E-06	0.00E+00		2.03E-06	6.42E-06
Benzo(g,h,i)perylene	1.60E-06	0.00E+00	0.00E+00	2.89E-07	1.88E-06
Benzo(k)fluoranthene *	1.64E-06	0.00E+00	0.00E+00	3.09E-07	1.94E-06
Chrysene *	7.19E-06	0.00E+00	0.00E+00	3.83E-06	4.23E-05
Dibenzo(a,h)anthracene *	0.00E+00	0.00E+00	0.00E+00	5.04E-08	5.04E-08
Dichlorobenzene	0.00E+00	0.00E+00			0.00E+00
Fluoranthene	2.44E-05	0.00E+00	0.00E+00	2.30E-05	4.44E-05
Fluorene	4.39E-04	0.00E+00	0.00E+00	2.07E-04	8.47E-04
Indeno(1,2,3-cd)pyrene *	2.80E-07	0.00E+00	0.00E+00	5.40E-08	3.44E-07
Naphthalene *	2.80E-02	0.00E+00	0.00E+00	3.56E-04	2.84E-02
Perylene	3.52E-07	0.00E+00		6.61E-08	4.33E-06
Phenanthrene	9.19E-04	0.00E+00	0.00E+00	2.03E-04	1.21E-03
Pyrene	1.20E-04	0.00E+00	0.00E+00	6.81E-05	1.89E-04
Non-HAP Organic Compounds					
Acetone*	1.75E-01	0.00E+00		1.30E-03	1.76E-01
Benzaldehyde	1.66E-02	0.00E+00			1.65E-02
Butane	1.61E-01	0.00E+00			1.01E-01
Butyraldehyde	2.40E-02	0.00E+00			2.40E-02
Crotonaldehyde*	1.29E-02	0.00E+00			1.29E-02
Ethylene	1.05E+00	0.00E+00		2.48E-03	1.07E+00
Heptane	1.41E+00	0.00E+00			1.41E+00
Hexanal	1.86E-02	0.00E+00			1.85E-02
Isovaleraldehyde	4.80E-03	0.00E+00			4.80E-03
2-Methyl-1-pentene	0.00E-01	0.00E+00			0.00E-01
2-Methyl-2-butene	8.70E-02	0.00E+00			8.70E-02
3-Methylpentane	2.85E-02	0.00E+00			2.85E-02
1-Pentene	3.30E-01	0.00E+00			3.30E-01
n-Pentane	3.15E-02	0.00E+00			3.15E-02
Valeraldehyde	1.01E-02	0.00E+00			1.01E-02
Metals					
Antimony*	2.70E-05	0.00E+00			2.70E-05
Arsenic*	2.24E-05	0.00E+00			2.24E-05
Barium*	8.70E-04	0.00E+00			8.70E-04
Beryllium*	0.00E+00	0.00E+00			0.00E+00
Cadmium*	1.84E-05	0.00E+00			1.84E-05
Chromium*	8.35E-04	0.00E+00			8.35E-04
Cobalt*	3.90E-06	0.00E+00			3.90E-06
Copper*	4.65E-04	0.00E+00			4.65E-04
Hexavalent Chromium*	1.80E-05	0.00E+00			1.80E-05
Manganese*	1.16E-03	0.00E+00			1.16E-03
Mercury*	3.90E-04	0.00E+00			3.90E-04
Molybdenum*	0.00E+00	0.00E+00			0.00E+00
Nickel*	2.52E-03	0.00E+00			2.52E-03
Phosphorus*	4.20E-03	0.00E+00			4.20E-03
Silver*	7.20E-05	0.00E+00			7.20E-05
Selenium*	5.25E-05	0.00E+00			5.25E-05
Thallium*	6.15E-07	0.00E+00			6.15E-07
Vanadium*	0.00E+00	0.00E+00			0.00E+00
Zinc*	9.15E-03	0.00E+00			9.15E-03

a) IDAPA Toxic Air Pollutant

Criteria Pollutant lb/hr emissions are maximum 1-hr averages
TAPs lb/hr rates are 24-hr averages except for those in bold text. Lb/hr rates for bold TAPs (carcinogens) are annual averages.
Pollutants shown in blue text are emitted only when burning Used Oil, but not when burning #2 Fuel Oil or Natural Gas

Facility: Central Paving Co., Inc.
7/19/2017 11:54 Permit/Facility ID: P-2011.0017 777-00085

EMISSION INVENTORY
POUNDS PER HOUR

Max Controlled Emissions of Any Pollutant from Drum Mix HMA Plant Fabric Filter, Tank Heater, Generator, Silo Fill/Load-out

A. Drum Mix Plant: 350 Tons/hour 1,000 Hours/year 350,000 Tons/year HMA throughput 2,000 hrs/day
Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected = Used Oil
B. Tank Heater: 0.0000 MMBtu/hr 4,000 Hours/year 0 hrs/day
Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected = #2 Fuel Oil Generator < 600hp 0 hrs/day
C1. IC Engine 1: 0.00 gal/hour 0 Hours/year #2 Fuel Oil Generator > 600hp 0 hrs/day
C2. IC Engine 2: 0.00 gal/hour 0 Hours/year

Pollutant	A Drum Mix Max Emission Rate for Pollutant (lb/hr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (lb/hr)	C IC Engine Max Emission Rate for Pollutant (lb/hr)	D Load-out & silo Filling Emission Rate for Pollutant (lb/hr)	E TOTAL of Max Emission Rates from A, B, C & D (lb/hr)
non-PAH HAPs*					
Bromomethane*				1.49E-04	1.49E-04
2-Butanone (see Methyl Ethyl Ketone)					
Carbon disulfide*				3.74E-04	3.74E-04
Chloroethane (Ethyl chloride)				7.44E-05	7.44E-05
Chloromethane (Methyl chloride)				5.14E-04	5.14E-04
Cumene				6.86E-04	6.86E-04
n-Hexane					
Methylene chloride (Dichloromethane)				4.94E-06	4.94E-06
MTBE					
Styrene*				1.44E-04	1.44E-04
Tetrachloroethene (Tetrachloroethylene)				4.80E-05	4.80E-05
1,1,1-Trichloroethane (Methyl chloroform)					
Trichloroethene (Trichloroethylene)				8.11E-06	8.11E-06
Trichlorofluoromethane				8.21E-03	8.21E-03
m-/p-Xylene*				6.03E-03	6.03E-03
o-Xylene*				6.03E-04	6.03E-04
Phenol*					
Non-HAP Organic Compounds					
Methane				5.18E-01	5.18E-01

a) IDAPA Toxic Air Pollutant

TAPs lb/hr rates are 24-hr averages except for those in bold text. Lb/hr rates for bold TAPs (carcinogens) are annual averages.

EmissionInventory lb hr

Facility: Central Paving Co., Inc.
7/19/2017 11:54 Permit/Facility ID: P-2011.0017 777-00088

EMISSION INVENTORY
TONS PER YEAR

Max Controlled Emissions of Any Pollutant from Drum Mix HMA Plant Fabric Filter, Tank Heater, Generator, Silo Fill/Load-out

A. Drum Mix Plant: 350 Tons/hour 1,000 Hours/year 350,000 Tons/year HMA throughput 3,500 hrs/day
Maximum emission for each pollutant from any fuel-burning options selected on "Facility Data" worksheet. Fuels Selected = Used Oil
B. Tank Heater: 0.0000 MMBtu/hr 4,000 Hours/year 8 hrs/day
Maximum emission for each pollutant for heater burning any fuel selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil 8 hrs/day
C1. IC Engine 1: 0.00 gal/hour 0 Hours/year IC Engine <600hp #2 Fuel Oil 0 hrs/day
C2. IC Engine 2: 0.00 gal/hour 0 Hours/year IC Engine > 600hp

Pollutant	A Drum Mix Max Emission Rate for Pollutant (T/yr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (T/yr)	C IC Engine IC1 + IC2 Max Emission Rate for Pollutant (T/yr)	D Load-out & Silo Filling Emission Rate for Pollutant (T/yr)	E POINT SOURCE TOTAL of Max Emission Rates from A, B, & C (T/yr) Exclude Fugitives (D)
PM (total)	5.78	0.00E+00	0.00E+00	1.94E-01	5.78
PM-10 (total)	4.03	0.00E+00	0.00E+00	1.94E-01	4.03
PM-2.5	3.90	0.00E+00	0.00E+00	1.94E-01	3.90
CO	22.75	0.00E+00	0.00E+00	4.43E-01	22.75
NOx	9.63	0.00E+00	0.00E+00		9.63
SO_2	0.62	0.00E+00	0.00E+00		0.62
VOC	5.60	0.00E+00	0.00E+00	7.05E-01	5.60
Lead	2.03E-03	0.00E+00	0.00E+00		2.03E-03
HCl*	3.68E-02	0.00E+00	0.00E+00		3.68E-02
Dioxins*					
2,3,7,8-TCDD	3.68E-11				3.68E-11
Total TCDD	1.63E-10				1.63E-10
1,2,3,7,8-PeCDD	5.43E-11				5.43E-11
Total PeCDD	3.65E-09				3.65E-09
1,2,3,4,7,8-HxCDD	7.35E-11	0.00E+00			7.35E-11
1,2,3,6,7,8-HxCDD	2.28E-10				2.28E-10
1,2,3,7,8,9-HxCDD	1.72E-10	0.00E+00			1.72E-10
Total HxCDD	2.10E-09				2.10E-09
1,2,3,4,6,7,8-Hp-CDD	8.40E-10	0.00E+00			8.40E-10
Total HpCDD	3.33E-09	0.00E+00			3.33E-09
Octa CDD	4.38E-09	0.00E+00			4.38E-09
Total PCDD*	1.38E-08	0.00E+00			1.38E-08
Furans*					
2,3,7,8-TCDF	1.70E-10				1.70E-10
Total TCDF	6.48E-10	0.00E+00			6.48E-10
1,2,3,7,8-PeCDF	7.53E-10				7.53E-10
2,3,4,7,8-PeCDF	1.47E-10				1.47E-10
Total PeCDF	1.47E-08	0.00E+00			1.47E-08
1,2,3,4,7,8-HxCDF	7.05E-10				7.05E-10
1,2,3,6,7,8-HxCDF	2.10E-10				2.10E-10
2,3,4,6,7,8-HxCDF	3.33E-10				3.33E-10
1,2,3,7,8,9-HxCDF	1.47E-09				1.47E-09
Total HxCDF	2.28E-08	0.00E+00			2.28E-08
1,2,3,4,6,7,8-HpCDF	1.14E-09				1.14E-09
1,2,3,4,7,8,9-HpCDF	4.73E-10				4.73E-10
Total HpCDF	1.75E-08	0.00E+00			1.75E-08
Octa CDF	8.40E-10	0.00E+00			8.40E-10
Total PCDF*	7.00E-08	0.00E+00			7.00E-08
Total PCDD/PCDF*	2.10E-08	0.00E+00			2.10E-08
Non-PAH HAPs					
Acetaldehyde*	2.28E-01		0.00E+00		2.28E-01
Acrolein*	4.55E-03		0.00E+00		4.55E-03
Benzene*	8.03E-02	0.00E+00	0.00E+00	1.06E-03	8.03E-02
1,3-Butadiene*	0.00E+00		0.00E+00		0.00E+00
Ethylbenzene*	4.20E-02			2.85E-03	4.20E-02
Formaldehyde*	5.43E-01	0.00E+00	0.00E+00	1.84E-02	5.43E-01
Hexane*	1.01E-01	0.00E+00		3.22E-03	1.01E-01
Isooctane	7.00E-03			1.97E-05	7.00E-03
Methyl Ethyl Ketone*	3.50E-03			1.19E-03	3.50E-03
Pentane*	0.00E+00	0.00E+00			0.00E+00
Propionaldehyde*	2.28E-02				2.28E-02
Quinone*	2.80E-02				2.80E-02
Methyl chloroform*	5.40E-03				5.40E-03
Toluene*	5.08E-01	0.00E+00	0.00E+00	2.85E-03	5.08E-01
Xylene*	3.50E-02	0.00E+00	0.00E+00	1.45E-02	3.50E-02
TOTAL Federal HAPs (T/yr)**					1.88E+00

Pollutant	A Drum Mix Max Emission Rate for Pollutant (T/yr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (T/yr)	C IC Engine IC1 + IC2 Max Emission Rate for Pollutant (T/yr)	D Load-out & Silo Filling Emission Rate for Pollutant (T/yr)	E POINT SOURCE TOTAL of Max Emission Rates from A, B, & C (T/yr) Exclude Fugitives (D)
PAH HAPs					
2-Methylnaphthalene	2.09E-02	0.00E+00		3.70E-03	2.09E-02
3-Methylchloranthrene*	0.00E+00	0.00E+00			0.00E+00
Acenaphthene	2.45E-04	0.00E+00	0.00E+00	3.84E-04	2.45E-04
Acenaphthylene	3.85E-03	0.00E+00	0.00E+00	2.29E-05	3.85E-03
Anthracene	5.43E-04	0.00E+00	0.00E+00	8.05E-05	5.43E-04
Benzo(a)anthracene*	3.85E-05	0.00E+00	0.00E+00	3.62E-06	3.85E-05
Benzo(a)pyrene*	1.72E-06	0.00E+00	0.00E+00	1.37E-06	1.72E-06
Benzo(b)fluoranthene*	1.75E-05	0.00E+00	0.00E+00	4.53E-06	1.75E-05
Benzo(e)pyrene	1.03E-03	0.00E+00		8.67E-06	1.03E-03
Benzo(g,h,i)perylene	7.00E-06	0.00E+00	0.00E+00	1.13E-06	7.00E-06
Benzo(k)fluoranthene*	7.18E-06	0.00E+00	0.00E+00	1.31E-06	7.18E-06
Chrysene*	3.15E-05	0.00E+00	0.00E+00	1.55E-04	3.15E-05
Dibenzo(a,h)anthracene*	0.00E+00	0.00E+00	0.00E+00	2.21E-07	0.00E+00
Dichlorobenzene	0.00E+00	0.00E+00			0.00E+00
Fluoranthene	1.07E-04	0.00E+00	0.00E+00	9.65E-05	1.07E-04
Fluorene	1.03E-03	0.00E+00	0.00E+00	9.08E-04	1.03E-03
Indeno(1,2,3-cd)pyrene*	1.23E-06	0.00E+00	0.00E+00	2.80E-07	1.23E-06
Naphthalene*	1.14E-01	0.00E+00	0.00E+00	1.55E-03	1.14E-01
Perylene	1.54E-06	0.00E+00		2.05E-05	1.54E-06
Phenanthrene	4.03E-03	0.00E+00	0.00E+00	1.26E-03	4.03E-03
Pyrene	5.25E-04	0.00E+00	0.00E+00	2.85E-04	5.25E-04
Non-HAP Organic Compounds					
Acetone*	1.45E-01	0.00E+00		1.51E-03	1.45E-01
Benzaldehyde	1.03E-02	0.00E+00			1.03E-02
Butane	1.17E-01	0.00E+00			1.17E-01
Butyraldehyde	2.60E-02	0.00E+00			2.60E-02
Crotonaldehyde*	1.51E-02	0.00E+00			1.51E-02
Ethylene	1.23E+00	0.00E+00		2.88E-02	1.23E+00
Heptane	1.85E+00	0.00E+00			1.85E+00
Hexanal	1.93E-02	0.00E+00			1.93E-02
Isovaleraldehyde	5.60E-03	0.00E+00			5.60E-03
2-Methyl-1-pentene	7.00E-01	0.00E+00			7.00E-01
2-Methyl-2-butene	1.02E-01	0.00E+00			1.02E-01
3-Methylpentane	3.33E-02	0.00E+00			3.33E-02
1-Pentene	3.85E-01	0.00E+00			3.85E-01
n-Pentane*	3.68E-02	0.00E+00			3.68E-02
Valeraldehyde*	1.17E-02	0.00E+00			1.17E-02
Metals					
Antimony*	3.15E-05	0.00E+00			3.15E-05
Arsenic*	9.80E-05	0.00E+00			9.80E-05
Barium*	1.02E-03	0.00E+00			1.02E-03
Beryllium*	0.00E+00	0.00E+00			0.00E+00
Cadmium*	7.18E-05	0.00E+00			7.18E-05
Chromium*	9.63E-04	0.00E+00			9.63E-04
Cobalt*	4.55E-06	0.00E+00			4.55E-06
Copper*	6.43E-04	0.00E+00			6.43E-04
Hexavalent Chromium*	7.88E-05	0.00E+00			7.88E-05
Manganese*	1.35E-03	0.00E+00			1.35E-03
Mercury*	4.55E-04	0.00E+00			4.55E-04
Molybdenum*	0.00E+00	0.00E+00			0.00E+00
Nickel*	1.10E-02	0.00E+00			1.10E-02
Phosphorus*	4.90E-03	0.00E+00			4.90E-03
Silver*	9.40E-05	0.00E+00			9.40E-05
Selenium*	6.13E-05	0.00E+00			6.13E-05
Thallium*	7.18E-07				7.18E-07
Vanadium*	0.00E+00	0.00E+00			0.00E+00
Zinc*	1.07E-02	0.00E+00			1.07E-02

EmissionInventory TPY

Facility: Central Paving Co., Inc.
7/19/2017 11:64 Permit/Facility ID: P-2011.0017 777-00085

EMISSION INVENTORY
TONS PER YEAR

Max Controlled Emissions of Any Pollutant from Drum Mix HMA Plant Fabric Filter, Tank Heater, Generator, Silo Fill/Load-out

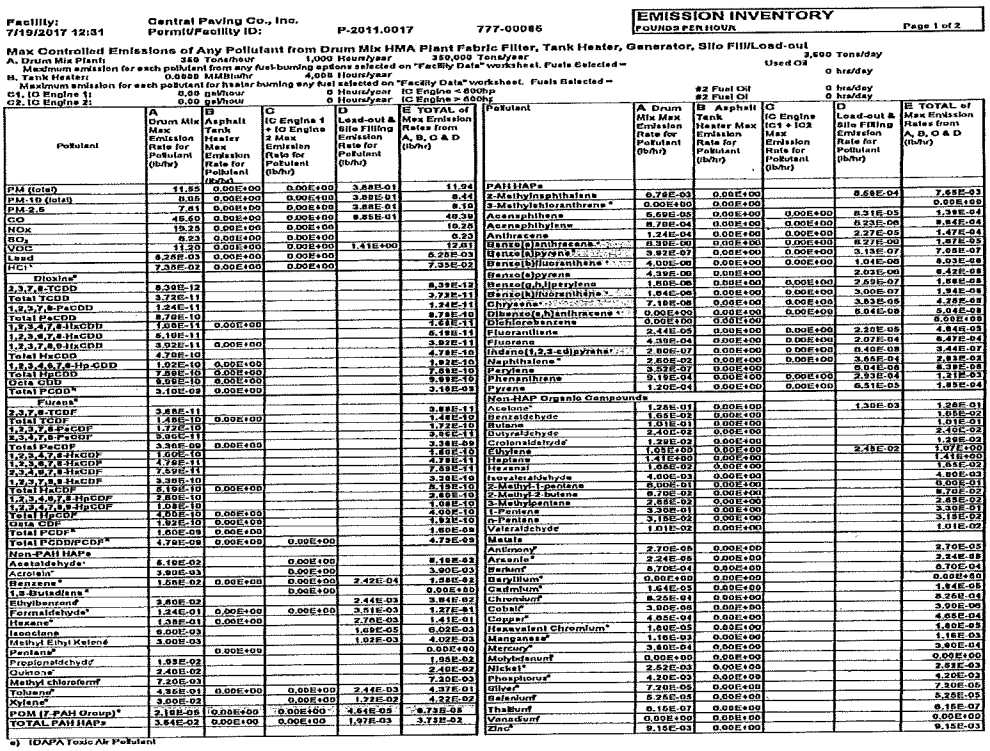
A. Drum Mix Plant: 350 Tons/hour 1,000 Hours/year 350,000 Tons/year Used Oil 3,500 Tons/day
Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected = 0 hrs/day
B. Tank Heater: 0.0000 MMBtu/hr 4,000 Hours/year
Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected = #2 Fuel Oil IC Engine <600hp 0 hrs/day
G1. Generator G1: 0.00 gal/hour 0 Hours/year #2 Fuel Oil IC Engine > 600hp 0 hrs/day
G2. Generator G2: 0.00 gal/hour 0 Hours/year

Pollutant	A Drum Mix Max Emission Rate for Pollutant (T/yr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (T/yr)	C Generator Max Emission Rate for Pollutant (T/yr)	D Load-out, Silo Filling, & Tank Storage Emission Rate for Pollutant (T/yr)	E POINT SOURCE TOTAL of Max Emission Rates from A, B, & C (T/yr) Exclude Fugitives (D)
non-PAH HAPs*				-	-
Bromomethane*				1.74E-04	0.00E+00
2-Butanone (aka Methyl Ethyl Ketone)					0.00E+00
Carbon disulfide*				4.36E-04	0.00E+00
Chloroethane (Ethyl chloride*)				8.68E-05	0.00E+00
Chloromethane (Methyl chloride*)				8.00E-04	0.00E+00
Cumene				8.01E-04	0.00E+00
n-Hexane				0.00E+00	0.00E+00
Methylene chloride (Dichloromethane*)				5.76E-06	0.00E+00
MTBE					0.00E+00
Styrene*				1.86E-04	0.00E+00
Tetrachloroethene (Tetrachloroethylene*)				5.80E-05	0.00E+00
1,1,1-Trichloroethane (Methyl chloroform*)				0.00E+00	0.00E+00
Trichloroethene (Trichloroethylene*)				0.00E+00	0.00E+00
Trichlorofluoromethane				9.48E-03	0.00E+00
m-/p-Xylene*				7.26E-03	0.00E+00
o-Xylene*				7.04E-03	0.00E+00
Phenol*J				7.04E-04	0.00E+00
Non-HAP Organic Compounds					
Methane				6.02E-01	0.00E+00

e) IDAPA Toxic Air Pollutant

EmissionInventory TPY

APPENDIX B – EMISSION INVENTORY 0.1% SO_2



Facility: Central Paving Co., Inc.
7/19/2017 12:31 **Permit/Facility ID:** P-2011.0017 777-00085

EMISSION INVENTORY
POUNDS PER HOUR
Page 1 of 2

Max Controlled Emissions of Any Pollutant from Drum Mix HMA Plant Fabric Filter, Tank Heater, Generator, Silo Fill/Load-out

A. Drum Mix Plant: 350 Tons/hour 1,000 Hours/year 350,000 Tons/year 3,500 Tons/day
Maximum emission for each pollutant from any fuel-burning options selected on "Facility Data" worksheet. Fuels Selected = Used Oil 0 hrs/day
B. Tank Heater: 0.0885 MMBtu/hr 4,008 Hours/year
Maximum emission for each pollutant for heater burning any fuel selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil 0 hrs/day
C1, IC Engine 1: 0.00 gal/hour 0 Hours/year IC Engine < 600hp #2 Fuel Oil 0 hrs/day
C2, IC Engine 2: 0.00 gal/hour 0 Hours/year IC Engine > 600hp

Pollutant	A Drum Mix Max Emission Rate for Pollutant (lb/hr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (lb/hr)	C IC Engine 1 + IC Engine 2 Max Emission Rate for Pollutant (lb/hr)	D Load-out & Silo Filling Emission Rate for Pollutant (lb/hr)	E TOTAL of Max Emission Rates from A, B, C & D (lb/hr)
		(lb/hr)			
PM (total)	11.85	0.00E+00	0.00E+00	3.88E-01	11.94
PM-10 (total)	8.05	0.00E+00	0.00E+00	3.88E-01	8.44
PM-2.5	7.81	0.00E+00	0.00E+00	3.88E-01	8.19
CO	45.50	0.00E+00	0.00E+00	9.85E-01	46.39
NOx	15.25	0.00E+00	0.00E+00		15.25
SO_2	8.23	0.00E+00	0.00E+00		8.23
VOC	11.20	0.00E+00	0.00E+00	1.41E+00	12.61
Lead	5.26E-03	0.00E+00	0.00E+00		5.26E-03
HCl[1]	7.35E-02	0.00E+00	0.00E+00		7.35E-02
Dioxins[a]					
2,3,7,8-TCDD	8.39E-12				8.39E-12
Total TCDD	3.72E-11				3.72E-11
1,2,3,7,8-PeCDD	1.24E-11				1.24E-11
Total PeCDD	8.76E-10				8.76E-10
1,2,3,4,7,8-HxCDD	1.05E-11	0.00E+00			1.05E-11
1,2,3,6,7,8-HxCDD	5.19E-11				5.19E-11
1,2,3,7,8,9-HxCDD	3.92E-11	0.00E+00			3.92E-11
Total HxCDD	4.78E-10				4.78E-10
1,2,3,4,6,7,8-HpCDD	1.02E-10	0.00E+00			1.02E-10
Total HpCDD	7.58E-10	0.00E+00			7.58E-10
Octa CDD	9.59E-10	0.00E+00			9.59E-10
Total PCDD*	3.10E-09	0.00E+00			3.10E-09
Furans*					
2,3,7,8-TCDF	3.88E-11				3.88E-11
Total TCDF	1.48E-10	0.00E+00			1.48E-10
1,2,3,7,8-PeCDF	1.72E-10				1.72E-10
2,3,4,7,8-PeCDF	3.95E-11				3.95E-11
Total PeCDF	3.36E-09	0.00E+00			3.36E-09
1,2,3,4,7,8-HxCDF	1.60E-10				1.60E-10
1,2,3,6,7,8-HxCDF	4.79E-11				4.79E-11
1,2,3,7,8,9-HxCDF	7.59E-11				7.59E-11
Total HxCDF	3.30E-10				3.30E-10
1,2,3,4,6,7,8-HpCDF	5.19E-10	0.00E+00			5.19E-10
1,2,3,4,7,8,9-HpCDF	2.80E-10				2.80E-10
Total HpCDF	1.08E-10				1.08E-10
Octa CDF	4.05E-10	0.00E+00			4.05E-10
Total PCDF*	1.92E-09	0.00E+00			1.92E-09
Total PCDD/PCDF*	1.60E-09	0.00E+00			1.60E-09
Non-PAH HAPs	4.79E-09	0.00E+00	0.00E+00		4.79E-09
Acetaldehyde*	5.10E-02		0.00E+00		5.10E-02
Acrolein*	3.90E-03		0.00E+00		3.90E-03
Benzene*	1.58E-02	0.00E+00	0.00E+00	2.42E-04	1.58E-02
1,3-Butadiene*			0.00E+00		0.00E+00
Ethylbenzene*	3.86E-02			2.44E-03	3.81E-02
Formaldehyde*	1.24E-01	0.00E+00	0.00E+00	3.51E-03	1.27E-01
Hexane*	1.38E-01	0.00E+00		2.76E-03	1.41E-01
Isooctane	6.00E-03			1.69E-05	6.02E-03
Methyl Ethyl Ketone	3.00E-03			1.02E-03	4.02E-03
Pentane*		0.00E+00			0.00E+00
Propionaldehyde	1.93E-02				1.93E-02
Quinone*	2.40E-02				2.40E-02
Methyl chloroform*	7.20E-03				7.20E-03
Toluene*	4.35E-01	0.00E+00	0.00E+00	2.44E-03	4.37E-01
Xylene*	3.00E-02		0.00E+00	1.72E-02	4.72E-02
POM (7-PAH Group)*	2.18E-05	0.00E+00	0.00E+00	4.61E-05	6.73E-05
TOTAL PAH HAPs	3.64E-02	0.00E+00	0.00E+00	1.97E-03	3.73E-02

Pollutant	A Drum Mix Max Emission Rate for Pollutant (lb/hr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (lb/hr)	C IC Engine IC1 + IC2 Max Emission Rate for Pollutant (lb/hr)	D Load-out & Silo Filling Emission Rate for Pollutant (lb/hr)	E TOTAL of Max Emission Rates from A, B, C & D (lb/hr)
PAH HAPs					
2-Methylnaphthalene	0.79E-03	0.00E+00		8.68E-04	7.66E-03
3-Methylchloranthrene *	0.00E+00	0.00E+00			0.00E+00
Acenaphthene	5.69E-06	0.00E+00	0.00E+00	8.31E-05	1.39E-04
Acenaphthylene	8.78E-04	0.00E+00	0.00E+00	5.23E-06	8.84E-04
Anthracene	1.24E-04	0.00E+00	0.00E+00	2.27E-05	1.47E-04
Benzo(a)anthracene *	8.30E-06	0.00E+00	0.00E+00	8.27E-06	1.66E-05
Benzo(a)pyrene *	3.92E-07	0.00E+00	0.00E+00	3.13E-07	7.05E-07
Benzo(b)fluoranthene *	4.00E-06	0.00E+00	0.00E+00	1.04E-06	5.03E-06
Benzo(e)pyrene	4.39E-06	0.00E+00		2.03E-06	6.42E-06
Benzo(g,h,i)perylene	1.80E-06	0.00E+00	0.00E+00	2.59E-07	1.86E-06
Benzo(k)fluoranthene *	1.64E-06	0.00E+00	0.00E+00	3.00E-07	1.94E-06
Chrysene *	7.18E-06	0.00E+00	0.00E+00	3.53E-05	4.25E-05
Dibenzo(a,h)anthracene *	0.00E+00	0.00E+00	0.00E+00	5.04E-06	5.04E-06
Dichlorobenzene	0.00E+00	0.00E+00			0.00E+00
Fluoranthene	2.44E-05	0.00E+00	0.00E+00	2.20E-05	4.64E-05
Fluorene	4.39E-04	0.00E+00	0.00E+00	2.07E-04	6.47E-04
Indene(1,2,3-cd)pyrene *	2.80E-07	0.00E+00	0.00E+00	8.40E-08	3.44E-07
Naphthalene *	2.60E-02	0.00E+00	0.00E+00	3.65E-04	2.63E-02
Perylene	3.52E-07	0.00E+00		6.04E-08	4.13E-06
Phenanthrene	9.19E-04	0.00E+00	0.00E+00	2.93E-04	1.21E-03
Pyrene	1.20E-04	0.00E+00	0.00E+00	6.51E-05	1.85E-04
Non-HAP Organic Compounds					
Acetone *	1.28E-01	0.00E+00		1.30E-03	1.28E-01
Benzaldehyde	1.65E-02	0.00E+00			1.65E-02
Butane	1.01E-01	0.00E+00			1.01E-01
Butyraldehyde	2.40E-02	0.00E+00			2.40E-02
Crotonaldehyde *	1.79E-02	0.00E+00			1.79E-02
Ethylene	1.03E+00	0.00E+00		2.48E-02	1.07E+00
Heptane	1.41E+00	0.00E+00			1.41E+00
Hexanal	1.65E-02	0.00E+00			1.65E-02
Isovaleraldehyde	4.80E-03	0.00E+00			4.80E-03
2-Methyl-1-pentene	8.00E-01	0.00E+00			8.00E-01
2-Methyl-2-butene	8.70E-02	0.00E+00			8.70E-02
3-Methylpentene	2.85E-02	0.00E+00			2.85E-02
1-Pentene	3.30E-01	0.00E+00			3.30E-01
n-Pentane	3.15E-02	0.00E+00			3.15E-02
Valeraldehyde	1.01E-02	0.00E+00			1.01E-02
Metals					
Antimony *	2.70E-05	0.00E+00			2.70E-05
Arsenic *	2.24E-05	0.00E+00			2.24E-05
Barium *	8.70E-04	0.00E+00			8.70E-04
Beryllium *	0.00E+00	0.00E+00			0.00E+00
Cadmium *	1.64E-03	0.00E+00			1.64E-03
Chromium *	8.25E-04	0.00E+00			8.25E-04
Cobalt *	3.00E-06	0.00E+00			3.00E-06
Copper *	4.65E-04	0.00E+00			4.65E-04
Hexavalent Chromium *	1.60E-05	0.00E+00			1.60E-05
Manganese *	1.16E-03	0.00E+00			1.16E-03
Mercury *	3.80E-04	0.00E+00			3.80E-04
Molybdenum *	0.00E+00	0.00E+00			0.00E+00
Nickel *	2.52E-03	0.00E+00			2.52E-03
Phosphorus *	4.20E-03	0.00E+00			4.20E-03
Silver *	7.20E-05	0.00E+00			7.20E-05
Selenium *	5.25E-05	0.00E+00			5.25E-05
Thallium *	8.15E-07	0.00E+00			8.15E-07
Vanadium *	0.00E+00	0.00E+00			0.00E+00
Zinc *	9.15E-03	0.00E+00			9.15E-03

a) IDAPA Toxic Air Pollutant

Criteria Pollutant lb/hr emissions are maximum 1-hr averages
TAPs lb/hr rates are 24-hr averages except for those in bold text. Lb/hr rates for bold TAPs (carcinogens) are annual averages.
Pollutants shown in blue text are emitted only when burning Used Oil, but not when burning #2 Fuel Oil or Natural Gas

EmissionInventory lb hr

Facility: Central Paving Co., Inc.
7/19/2017 12:31 Permit/Facility ID: P-2011.0017 777-00085

EMISSION INVENTORY
POUNDS PER HOUR

Max Controlled Emissions of Any Pollutant from Drum Mix HMA Plant Fabric Filter, Tank Heater, Generator, Silo Fill/Load-out

A. Drum Mix Plant: 360 Tons/hour 1,000 Hours/year 360,000 Tons/year HMA throughput 3,600 hrs/day
Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected = Used Oil 0 hrs/day
B. Tank Heater: 0.0000 MMBtu/hr 4,000 Hours/year
Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected =
C1. IC Engine 1: 0.00 gal/hour 0 Hours/year #2 Fuel Oil Generator < 600hp 0 hrs/day
C2. IC Engine 2: 0.00 gal/hour 0 Hours/year #2 Fuel Oil Generator > 600hp 0 hrs/day

Pollutant	A Drum Mix Max Emission Rate for Pollutant (lb/hr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (lb/hr)	C IC Engine Max Emission Rate for Pollutant (lb/hr)	D Load-out & Silo Filling Emission Rate for Pollutant (lb/hr)	E TOTAL of Max Emission Rates from A, B, C & D (lb/hr)
non-PAH HAPs*					
Bromomethane*				1.40E-04	1.40E-04
2-Butanone (see Methyl Ethyl Ketone)					
Carbon disulfide*				3.74E-04	3.74E-04
Chloroethane (Ethyl chloride)				7.44E-05	7.44E-05
Chloromethane (Methyl Chloride)				6.14E-04	6.14E-04
Cumene				6.86E-04	6.86E-04
n-Hexane					
Methylene chloride (Dichloromethane)				4.94E-08	4.94E-08
MTBE					
Styrene*				1.44E-04	1.44E-04
Tetrachloroethane (Tetrachloroethylene)				4.80E-05	4.80E-05
1,1,1 Trichloroethane (Methyl chloroform)					
Trichloroethene (Trichloroethylene)					
Trichlorofluoromethane				6.11E-05	6.11E-05
m-/p-Xylene*				6.21E-03	6.21E-03
o-Xylene*				6.03E-03	6.03E-03
Phenol*				6.03E-04	6.03E-04
Non-HAP Organic Compounds					
Methane				5.16E-01	5.16E-01

*) IDAPA Toxic Air Pollutant

TAPs lb/hr rates are 24-hr averages except for those in bold text. Lb/hr rates for bold TAPs (carcinogens) are annual averages.

Emissionsinventory lb hr

Facility: Central Paving Co., Inc.
7/19/2017 12:31 **Permit/Facility ID:** P-2011.0017 777-00085

EMISSION INVENTORY
TONS PER YEAR

Max Controlled Emissions of Any Pollutant from Drum Mix HMA Plant Fabric Filter, Tank Heater, Generator, Silo Fill/Load-out

A. Drum Mix Plant: 350 Tons/hour 1,500 Hours/year 350,000 Tons/year HMA throughput 3,500 hrs/day
Maximum emission for each pollutant from any fuel-burning options selected on "Facility Data" worksheet. Fuels Selected = Used Oil
B. Tank Heater: 0.0000 MMBtu/hr 4,000 Hours/year 0 hrs/day
Maximum emission for each pollutant for heater burning any fuel selected on "Facility Data" worksheet. Fuels Selected = #2 Fuel Oil 0 hrs/day
C1, IC Engine 1: 0.00 gal/hour 0 Hours/year IC Engine <600hp #2 Fuel Oil 0 hrs/day
C2, IC Engine 2: 0.00 gal/hour 0 Hours/year IC Engine > 600hp

Pollutant	A Drum Mix Max Emission Rate for Pollutant (T/yr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (T/yr)	C IC Engine IC1 + IC2 Max Emission Rate for Pollutant (T/yr)	D Load-out & Silo Filling Emission Rate for Pollutant (T/yr)	E POINT SOURCE TOTAL of Max Emission Rates from A, B, & C (T/yr) Exclude Fugitives (D)
PM (total)	5.78	0.00E+00	0.00E+00	1.94E-01	5.78
PM-10 (total)	4.03	0.00E+00	0.00E+00	1.94E-01	4.03
PM-2.5	3.90	0.00E+00	0.00E+00	1.94E-01	3.90
CO	22.76	0.00E+00	0.00E+00	4.43E-01	22.76
NOx	9.83	0.00E+00	0.00E+00		9.83
SO_2	3.12	0.00E+00	0.00E+00		3.12
VOC	5.60	0.00E+00	0.00E+00	7.05E-01	5.60
Lead	2.03E-03	0.00E+00	0.00E+00		2.03E-03
HCl*	3.68E-02	0.00E+00	0.00E+00		3.68E-02
Dioxins*					
2,3,7,8-TCDD	3.88E-11				3.88E-11
Total TCDD	1.63E-10				1.63E-10
1,2,3,7,8-PeCDD	5.42E-11				5.42E-11
Total PeCDD	3.85E-09				3.85E-09
1,2,3,4,7,8-HxCDD	7.35E-11	0.00E+00			7.35E-11
1,2,3,6,7,8-HxCDD	2.28E-10				2.28E-10
1,2,3,7,8,9-HxCDD	1.72E-10	0.00E+00			1.72E-10
Total HxCDD	2.10E-09				2.10E-09
1,2,3,4,6,7,8-HpCDD	8.40E-10	0.00E+00			8.40E-10
Total HpCDD	3.33E-09	0.00E+00			3.33E-09
Octa CDD	4.38E-09	0.00E+00			4.38E-09
Total PCDD*	1.38E-08	0.00E+00			1.38E-08
Furans*					
2,3,7,8-TCDF	1.70E-10				1.70E-10
Total TCDF	6.45E-10	0.00E+00			6.45E-10
1,2,3,7,8-PeCDF	7.53E-10				7.53E-10
2,3,4,7,8-PeCDF	1.47E-10				1.47E-10
Total PeCDF	1.47E-08	0.00E+00			1.47E-08
1,2,3,4,7,8-HxCDF	7.00E-10				7.00E-10
1,2,3,6,7,8-HxCDF	2.10E-10				2.10E-10
2,3,4,6,7,8-HxCDF	3.33E-10				3.33E-10
1,2,3,7,8,9-HxCDF	1.47E-09				1.47E-09
Total HxCDF	2.28E-09	0.00E+00			2.28E-09
1,2,3,4,6,7,8-HpCDF	1.14E-09				1.14E-09
1,2,3,4,7,8,9-HpCDF	4.73E-10				4.73E-10
Total HpCDF	1.75E-09	0.00E+00			1.75E-09
Octa CDF	8.40E-10	0.00E+00			8.40E-10
Total PCDF*	7.00E-09	0.00E+00			7.00E-09
Total PCDD/PCDF*	2.10E-08	0.00E+00			2.10E-08
Non-PAH HAPs					
Acetaldehyde*	2.28E-01		0.00E+00		2.28E-01
Acrolein*	4.55E-03		0.00E+00		4.55E-03
Benzene*	6.83E-02	0.00E+00	0.00E+00	1.95E-03	6.83E-02
1,3-Butadiene*	0.00E+00		0.00E+00		0.00E+00
Ethylbenzene*	4.20E-02			2.85E-03	4.20E-02
Formaldehyde*	5.43E-01	0.00E+00	0.00E+00	1.54E-02	5.43E-01
Hexane*	1.81E-01	0.00E+00		3.22E-03	1.81E-01
Isooctane	7.00E-03			1.07E-05	7.00E-03
Methyl Ethyl Ketone*	3.50E-03			1.19E-03	3.50E-03
Pentane*	0.00E+00	0.00E+00			0.00E+00
Propionaldehyde*	2.28E-02				2.28E-02
Quinone*	2.80E-02				2.80E-02
Methyl chloroform*	5.40E-03				5.40E-03
Toluene*	5.08E-01	0.00E+00	0.00E+00	2.85E-03	5.08E-01
Xylene*	3.50E-02	0.00E+00	0.00E+00	1.43E-02	3.50E-02
TOTAL Federal HAPs (T/yr)=					1.88E+00

Pollutant	A Drum Mix Max Emission Rate for Pollutant (T/yr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (T/yr)	C IC Engine IC1 + IC2 Max Emission Rate for Pollutant (T/yr)	D Load-out & Silo Filling Emission Rate for Pollutant (T/yr)	E POINT SOURCE TOTAL of Max Emission Rates from A, B, & C (T/yr) Exclude Fugitives (D)
PAH HAPs					
2-Methylnaphthalene	2.08E-02	0.00E+00		3.76E-03	2.08E-02
3-Methylchloranthrene*	0.00E+00	0.00E+00			0.00E+00
Acenaphthene	2.45E-04	0.00E+00	0.00E+00	3.64E-04	2.45E-04
Acenaphthylene	3.85E-03	0.00E+00	0.00E+00	2.29E-05	3.85E-03
Anthracene	5.43E-04	0.00E+00	0.00E+00	9.95E-05	5.43E-04
Benzo(a)anthracene*	3.68E-05	0.00E+00	0.00E+00	3.52E-05	3.68E-05
Benzo(a)pyrene*	1.72E-06	0.00E+00	0.00E+00	1.97E-06	1.72E-06
Benzo(b)fluoranthene*	1.76E-05	0.00E+00	0.00E+00	4.83E-06	1.76E-05
Benzo(e)pyrene	1.93E-05	0.00E+00		8.67E-06	1.93E-05
Benzo(g,h,i)perylene	7.00E-06	0.00E+00	0.00E+00	1.13E-06	7.00E-06
Benzo(k)fluoranthene*	7.18E-06	0.00E+00	0.00E+00	1.31E-06	7.18E-06
Chrysene*	3.15E-05	0.00E+00	0.00E+00	1.56E-04	3.15E-05
Dibenzo(a,h)anthracene*	0.00E+00	0.00E+00	0.00E+00	2.21E-07	0.00E+00
Dichlorobenzene	0.00E+00	0.00E+00			0.00E+00
Fluoranthene	1.07E-04	0.00E+00	0.00E+00	9.86E-05	1.07E-04
Fluorene	1.93E-03	0.00E+00	0.00E+00	9.09E-04	1.93E-03
Indeno(1,2,3-cd)pyrene*	1.23E-06	0.00E+00	0.00E+00	2.49E-07	1.23E-06
Naphthalene*	1.14E-01	0.00E+00	0.00E+00	1.55E-03	1.14E-01
Perylene	1.54E-06	0.00E+00		2.85E-05	1.54E-06
Phenanthrene	4.03E-03	0.00E+00	0.00E+00	1.28E-03	4.03E-03
Pyrene	5.25E-04	0.00E+00	0.00E+00	2.85E-04	5.25E-04
Non-HAP Organic Compounds					
Acetone*	1.45E-01	0.00E+00		1.51E-03	1.45E-01
Benzaldehyde	1.93E-02	0.00E+00			1.93E-02
Butane	1.17E-01	0.00E+00			1.17E-01
Butyraldehyde	2.80E-02	0.00E+00			2.80E-02
Crotonaldehyde*	1.61E-02	0.00E+00			1.61E-02
Ethylene	1.23E+00	0.00E+00		2.56E-02	1.23E+00
Heptane	1.65E+00	0.00E+00			1.65E+00
Hexanal	1.93E-02	0.00E+00			1.93E-02
Isovaleraldehyde	5.60E-03	0.00E+00			5.60E-03
2-Methyl-1-pentene	7.00E-01	0.00E+00			7.00E-01
2-Methyl-2-butene	1.02E-01	0.00E+00			1.02E-01
3-Methylpentane	3.33E-02	0.00E+00			3.33E-02
1-Pentene	3.05E-01	0.00E+00			3.05E-01
n-Pentane*	3.88E-02	0.00E+00			3.88E-02
Valeraldehyde*	1.17E-02	0.00E+00			1.17E-02
Metals					
Antimony*	3.15E-05	0.00E+00			3.15E-05
Arsenic*	9.80E-05	0.00E+00			9.80E-05
Barium*	1.02E-03	0.00E+00			1.02E-03
Beryllium*	0.00E+00	0.00E+00			0.00E+00
Cadmium*	7.18E-05	0.00E+00			7.18E-05
Chromium*	9.83E-04	0.00E+00			9.83E-04
Cobalt*	4.55E-06	0.00E+00			4.55E-06
Copper*	5.43E-04	0.00E+00			5.43E-04
Hexavalent Chromium*	7.88E-05	0.00E+00			7.88E-05
Manganese*	1.35E-03	0.00E+00			1.35E-03
Mercury*	4.55E-04	0.00E+00			4.55E-04
Molybdenum*	0.00E+00	0.00E+00			0.00E+00
Nickel*	1.10E-02	0.00E+00			1.10E-02
Phosphorus*	4.90E-03	0.00E+00			4.90E-03
Silver*	6.40E-05	0.00E+00			6.40E-05
Selenium*	8.13E-05	0.00E+00			8.13E-05
Thallium*	7.18E-07				7.18E-07
Vanadium*	0.00E+00	0.00E+00			0.00E+00
Zinc*	1.07E-02	0.00E+00			1.07E-02

EmissionInventory TPY

Facility: Central Paving Co., Inc.
7/19/2017 12:31 Permit/Facility ID: P-2011.0017 777-00005

EMISSION INVENTORY
TONS PER YEAR

Max Controlled Emissions of Any Pollutant from Drum Mix HMA Plant Fabric Filter, Tank Heater, Generator, Silo Fill/Load-out

A. Drum Mix Plant: 350 Tons/hour 1,000 Hours/year 350,000 Tons/year 3,600 Tons/day
Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected = Used Oil
B. Tank Heater: 0.0000 MMBtu/hr 4,000 Hours/year 0 hrs/day
Maximum emission for each pollutant from any fuel-burning option selected. Fuels Selected = 0 Hours/year #2 Fuel Oil IC Engine <600hp 0 hrs/day
C1. Generator G1: 0.00 gal/hour 0 Hours/year #2 Fuel Oil IC Engine > 600hp 0 hrs/day
C2. Generator G2: 0.00 gal/hour

Pollutant	A Drum Mix Max Emission Rate for Pollutant (T/yr)	B Asphalt Tank Heater Max Emission Rate for Pollutant (T/yr)	C Generator Max Emission Rate for Pollutant (T/yr)	D Load-out, Silo Filling, & Tank Storage Emission Rate for Pollutant (T/yr)	E POINT SOURCE TOTAL of Max Emission Rates from A, B, & C (T/yr) Exclude Fugitives (D)
non-PAH HAPs*					
Biomemethane*				1.74E-04	0.00E+00
2-Butanone (Mek Methyl Ethyl Ketone)					0.00E+00
Carbon Bisulfide*				4.38E-04	0.00E+00
Chloroethane (Ethyl chloride*)				8.68E-05	0.00E+00
Chloromethane (Methyl chloride*)				8.00E-04	0.00E+00
Cumene				8.01E-04	0.00E+00
n-Hexane				0.00E+00	0.00E+00
Methylene chloride (Dichloromethane*)				5.76E-00	0.00E+00
MTBE					0.00E+00
Styrene*				1.68E-04	0.00E+00
Tetrachloroethane (Tetrachloroethylene*)				5.60E-05	0.00E+00
1,1,1-Trichloroethane (Methyl chloroform*)				0.00E+00	0.00E+00
Trichloroethane (Trichloroethylene*)				0.00E+00	0.00E+00
Trichlorofluoromethane				9.48E-05	0.00E+00
m-/p-Xylene*				7.25E-03	0.00E+00
o-Xylene*				7.04E-03	0.00E+00
Phenol*				7.04E-04	0.00E+00
Non-HAP Organic Compounds					
Methane				8.02E-01	0.00E+00

e) IDAPA Toxic Air Pollutant

EmissionInventory TPY

APPENDIX C – AMBIENT AIR IMPACT ANALYSES MEMORANDUM

DATE: September 5, 2017

TO: Will Tiedemann, Permit Writer, Air Program

FROM: Kevin Schilling, Stationary Source Modeling Coordinator, Air Program

PROJECT: PP-2011.0017 PROJ 61922, Permit to Construct (PTC) for Modification of Central Paving Co., Inc. HP 2, Hot Mix Asphalt Plant

SUBJECT: Demonstration of Compliance with IDAPA 58.01.01.203.02 (NAAQS) and 203.03 (TAPs) as it relates to air quality impact analyses.

Contents

Acronyms, Units, and Chemical Nomenclature

AAC	Acceptable Ambient Concentration of a non-carcinogenic TAP
AACC	Acceptable Ambient Concentration of a Carcinogenic TAP
acfm	Actual cubic feet per minute
AERMAP	The terrain data preprocessor for AERMOD
AERMET	The meteorological data preprocessor for AERMOD
AERMOD	American Meteorological Society/Environmental Protection Agency Regulatory Model
Appendix W	40 CFR 51, Appendix W – Guideline on Air Quality Models
As	Arsenic
BPIP	Building Profile Input Program
BRC	Below Regulatory Concern
CBP	Concrete Batch Plant
Central Paving	Central Paving Co., Inc. HP 2
CFR	Code of Federal Regulations
CMAQ	Community Multi-Scale Air Quality Modeling System
CO	Carbon Monoxide
Cr6+	Hexavalent Chromium
DEM	Digital Elevation Map
DEQ	Idaho Department of Environmental Quality
EL	Emissions Screening Level of a TAP
EPA	United States Environmental Protection Agency
GEP	Good Engineering Practice
hr	hours
Idaho Air Rules	Rules for the Control of Air Pollution in Idaho, located in the Idaho Administrative Procedures Act 58.01.01
ISCST3	Industrial Source Complex Short Term 3 dispersion model
K	Kelvin
m	Meters
m/sec	Meters per second
MMBtu	Million British Thermal Units
NAAQS	National Ambient Air Quality Standards
NO	Nitrogen Oxide
NO_2	Nitrogen Dioxide
NOx	Oxides of Nitrogen
NWS	National Weather Service

O_3	Ozone
Pb	Lead
PM_{10}	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 10 micrometers
$PM_{2.5}$	Particulate matter with an aerodynamic particle diameter less than or equal to a nominal 2.5 micrometers
ppb	parts per million
PRIME	Plume Rise Model Enhancement
PTC	Permit to Construct
PTE	Potential to Emit
SIL	Significant Impact Level
SO_2	Sulfur Dioxide
TAP	Toxic Air Pollutant
tpy	tons per year
USGS	United States Geological Survey
UTM	Universal Transverse Mercator
VOC	Volatile Organic Compounds
$\mu g/m^3$	Micrograms per cubic meter of air

1.0 Summary

Central Paving Co., Inc. HP 2 (Central Paving) submitted a Permit to Construct (PTC) application for modifications to their existing PTC for operations of a portable hot mix asphalt (HMA) plant in Idaho. Central Paving proposed to increase the allowable sulfur content of used oil combusted in the HMA plant. The PTC application was received on July 21, 2017.

The Idaho Administrative Procedures Act 58.01.01.203.02 and 203.03 (Idaho Air Rules Section 203.02 and 203.03) requires that no permit be issued unless it is demonstrated that applicable emissions do not result in violation of a National Ambient Air Quality Standard (NAAQS) or Toxic Air Pollutant (TAP) increment. This memorandum provides a summary of the ambient air impact analyses performed by DEQ to demonstrate compliance with applicable NAAQS and TAP increments, as required by Idaho Air Rules Section 203.02 and 203.03.

DEQ performed ambient air impact analyses for this project to demonstrate compliance with applicable National Ambient Air Quality Standards (NAAQS) and Toxic Air Pollutant (TAP) allowable ambient increments. DEQ's analyses summarized by this memorandum addressed only the rules, policies, methods, and data pertaining to the air impact analyses used to demonstrate that the estimated emissions associated with operation of the facility will not cause or significantly contribute to a violation of any applicable air quality standard. This review did not evaluate compliance with other rules or analyses that do not pertain to the air impact analyses. Evaluation of emissions estimates was the responsibility of the permit writer and is addressed in the main body of the Statement of Basis, and emissions calculation methods were not evaluated in this modeling review memorandum.

The submitted information, in combination with DEQ's analyses: 1) utilized appropriate methods and models; 2) was conducted using reasonably accurate or conservative model parameters and input data (review of emissions estimates was addressed by the DEQ permit writer); 3) adhered to established DEQ guidelines for new source review dispersion modeling; 4) showed either a) that estimated potential/allowable emissions are at a level defined as below regulatory concern (BRC) and do not require a NAAQS compliance demonstration; b) that predicted pollutant concentrations from emissions associated with the project as modeled were below Significant Impact Levels (SILs) or other applicable regulatory thresholds; or c) that predicted pollutant concentrations from emissions associated with the project as modeled, when appropriately combined with co-contributing sources and background concentrations, were below applicable NAAQS at ambient air locations where and when the project has a significant impact; 5) showed that TAP emissions increases associated with the project will not result in increased ambient air impacts exceeding allowable TAP increments.

Table 1 presents key assumptions and results to be considered in the development of the permit. Idaho Air Rules require air impact analyses be conducted in accordance with methods outlined in 40 CFR 51, Appendix W *Guideline on Air Quality Models* (Appendix W). Appendix W requires that air quality impacts be assessed using atmospheric dispersion models with emissions and operations representative of design capacity or as limited by a federally enforceable permit condition. The submitted information and analyses and analyses performed by DEQ, demonstrated to the satisfaction of the Department that operation of the proposed facility will not cause or significantly contribute to a violation of any ambient air quality standard, provided the key conditions in Table 1 are representative of facility design capacity or operations as limited by a federally enforceable permit condition. The DEQ permit writer should use Table 1 and other information presented in this memorandum to generate appropriate permit provisions/restrictions to assure the requirements of Appendix W are met regarding emissions representing design capacity or permit allowable rates.

Table 1. KEY CONDITIONS USED IN MODELING ANALYSES	
Criteria/Assumption/Result	**Explanation/Consideration**
The allowable sulfur content of oil used in the HMA will not exceed 0.1 percent.	Compliance with short-term SO_2 NAAQS is not assured, using the existing setback limits in the PTC, if oil having a sulfur content exceeding 0.1 percent is used.
Other emissions limits, throughput restrictions, and setback requirements listed in the existing permit will not change with this proposed modification.	The permit conditions in the existing permit are still needed to assure compliance with other NAAQS.
Source release parameters of the HMA dryer will not change with this proposed action and will be as follows: stack height $\geq$ 37.5 feet; stack diameter $\leq$ 2.6 feet; exhaust temperature $\geq$ 240° F;	Decreased HMA throughput will offset potential impacts of a nearby crushing plant.
NAAQS compliance is assured provided stack parameters of exhaust temperatures and flow rates are not less than about 75 percent of values listed in this memorandum.	Higher temperatures and flow rates increase plume rise, allowing the plume to disperse to a larger degree before impacting ground level.

2.0 Background Information

This section provides background information applicable to the project and the site where the facility will be located. It also provides a brief description of the applicable air impact analyses requirements for the project.

2.1 Project Description, Proposed Location, and Area Classification

The HMA plant is a portable facility. The impact analyses performed assumed that the HMA plant will only locate in areas designated as attainment or unclassifiable for all criteria pollutants, and the plant will not locate in areas of air quality concern, as identified by DEQ. Areas of concern are areas where background concentrations are effectively above or very near the applicable NAAQS.

2.2 Air Impact Analyses Required for All Permits to Construct

Criteria Pollutant and TAP Impact Analyses for a PTC are addressed in Idaho Air Rules Sections 203.02 and 203.03:

> *No permit to construct shall be granted for a new or modified stationary source unless the applicant shows to the satisfaction of the Department all of the following:*
>
> ***02. NAAQS.*** *The stationary source or modification would not cause or significantly contribute to a violation of any ambient air quality standard.*
>
> ***03. Toxic Air Pollutants.*** *Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant*

carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.

Atmospheric dispersion modeling, using computerized simulations, is used to demonstrate compliance with both NAAQS and TAPs. Idaho Air Rules Section 202.02 states:

***Estimates of Ambient Concentrations**. All estimates of ambient concentrations shall be based on the applicable air quality models, data bases, and other requirements specified in 40 CFR 51 Appendix W (Guideline on Air Quality Models).*

2.3 Significant Impact Level and Cumulative NAAQS Impact Analyses

The Significant Impact Level (SIL) analysis for a new facility or proposed modification to a facility involves modeling estimated criteria air pollutant emissions from the facility or modification to determine the potential impacts to ambient air. Air impact analyses are required by Idaho Air Rules to be conducted according to methods outlined in 40 CFR 51, Appendix W (Guideline on Air Quality Models). Appendix W requires that facilities be modeled using emissions and operations representative of design capacity or as limited by a federally enforceable permit condition.

A facility or modification is considered to have a significant impact on air quality if maximum modeled impacts to ambient air exceed the established SIL listed in Idaho Air Rules Section 006 (referred to as a significant contribution in Idaho Air Rules) or as incorporated by reference as per Idaho Air Rules Section 107.03.b. Table 2 lists the applicable SILs.

If modeled maximum pollutant impacts to ambient air from the emissions sources associated with a new facility or modification exceed the SILs, then a cumulative NAAQS impact analysis is necessary to demonstrate compliance with NAAQS and Idaho Air Rules Section 203.02.

A cumulative NAAQS impact analysis for attainment area pollutants involves assessing ambient impacts (typically the design values consistent with the form of the standard) from facility-wide emissions, and emissions from any nearby co-contributing sources, and then adding a DEQ-approved background concentration value to the modeled result that is appropriate for the criteria pollutant/averaging-period at the facility location and the area of significant impact. The resulting pollutant concentrations in ambient air are then compared to the NAAQS listed in Table 2. Table 2 also lists SILs and specifies the modeled design value that must be used for comparison to the NAAQS. NAAQS compliance is evaluated on a receptor-by-receptor basis for the modeling domain.

If the cumulative NAAQS impact analysis indicates a violation of the standard, the permit may not be issued if the proposed project has a significant contribution (exceeding the SIL) to the modeled violation. This evaluation is made specific to both time and space. If the SIL analysis indicates the facility/modification has impacts exceeding the SIL, the facility might not have a significant contribution to violations if impacts are below the SIL at the specific receptors showing the violations during the time periods when modeled violations occurred.

Compliance with Idaho Air Rules Section 203.02 is generally demonstrated if: a) all modeled impacts of the SIL analysis are below the applicable SIL or other level determined to be inconsequential to NAAQS compliance; or

b) modeled design values of the cumulative NAAQS impact analysis (modeling all emissions from the facility and co-contributing sources, and adding a background concentration) are less than applicable NAAQS at receptors where impacts from the proposed facility/modification exceeded the SIL or other identified level of consequence; or c) if the cumulative NAAQS analysis showed NAAQS violations, the impact of proposed facility/modification to any modeled violation was inconsequential (typically assumed to be less than the established SIL) for that specific receptor and for the specific modeled time when the violation occurred.

1. **Table 2. APPLICABLE REGULATORY LIMITS**

2. Pollutant	Averaging Period	Significant Impact Levels[a] ($\mu g/m^3$)[b]	Regulatory Limit[c] ($\mu g/m^3$)	Modeled Design Value Used[d]
PM_{10}[e]	24-hour	5.0	150[f]	Maximum 6th highest[g]
$PM_{2.5}$[h]	24-hour	1.2	35[i]	Mean of maximum 8th highest[j]
	Annual	0.3	12[k]	Mean of maximum 1st highest[l]
Carbon monoxide (CO)	1-hour	2,000	40,000[m]	Maximum 2nd highest[n]
	8-hour	500	10,000[m]	Maximum 2nd highest[n]
Sulfur Dioxide (SO_2)	1-hour	3 ppb[o] (7.8 $\mu g/m^3$)	75 ppb[p] (196 $\mu g/m^3$)	Mean of maximum 4th highest[q]
	3-hour	25	1,300[m]	Maximum 2nd highest[n]
	24-hour	5	365[m]	Maximum 2nd highest[n]
	Annual	1.0	80[r]	Maximum 1st highest[n]
Nitrogen Dioxide (NO_2)	1-hour	4 ppb (7.5 $\mu g/m^3$)	100 ppb[s] (188 $\mu g/m^3$)	Mean of maximum 8th highest[t]
	Annual	1.0	100[r]	Maximum 1st highest[n]
Lead (Pb)	3-month[u]	NA	0.15[r]	Maximum 1st highest[n]
	Quarterly	NA	1.5[r]	Maximum 1st highest[n]
Ozone (O_3)	8-hour	40 TPY VOC[v]	70 ppb[w]	Not typically modeled

a. Idaho Air Rules Section 006 (definition for significant contribution) or as incorporated by reference as per Idaho Air Rules Section 107.03.b.

b. Micrograms per cubic meter.

c. Incorporated into Idaho Air Rules by reference, as per Idaho Air Rules Section 107.

d. The maximum 1st highest modeled value is always used for the significant impact analysis unless indicated otherwise. Modeled design values are calculated for each ambient air receptor.

e. Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers.

f. Not to be exceeded more than once per year on average over 3 years.

g. Concentration at any modeled receptor when using five years of meteorological data.

h. Particulate matter with an aerodynamic diameter less than or equal to a nominal 2.5 micrometers.

i. 3-year mean of the upper 98th percentile of the annual distribution of 24-hour concentrations.

j. 5-year mean of the 8th highest modeled 24-hour concentrations at the modeled receptor for each year of meteorological data modeled. For the SIL analysis, the 5-year mean of the 1st highest modeled 24-hour impacts at the modeled receptor for each year.

k. 3-year mean of annual concentration.

l. 5-year mean of annual averages at the modeled receptor.

m. Not to be exceeded more than once per year.

n. Concentration at any modeled receptor.

o. Interim SIL established by EPA policy memorandum.

p. 3-year mean of the upper 99th percentile of the annual distribution of maximum daily 1-hour concentrations.

q. 5-year mean of the 4th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of 1st highest modeled 1-hour impacts for each year is used.

r. Not to be exceeded in any calendar year.

s. 3-year mean of the upper 98th percentile of the annual distribution of maximum daily 1-hour concentrations.

t. 5-year mean of the 8th highest daily 1-hour maximum modeled concentrations for each year of meteorological data modeled. For the significant impact analysis, the 5-year mean of maximum modeled 1-hour impacts for each year is used.

u. 3-month rolling average.

v. An annual emissions rate of 40 ton/year of VOCs is considered significant for O_3.

w. Annual 4th highest daily maximum 8-hour concentration averaged over three years.

2.4 Toxic Air Pollutant Analyses

Emissions of toxic substances are generally addressed by Idaho Air Rules Section 161:

> *Any contaminant which is by its nature toxic to human or animal life or vegetation shall not be emitted in such quantities or concentrations as to alone, or in combination with other contaminants, injure or unreasonably affect human or animal life or vegetation.*

Permitting requirements for TAPs from new or modified sources are specifically addressed by Idaho Air Rules Section 203.03 and require the applicant to demonstrate to the satisfaction of DEQ the following:

Using the methods provided in Section 210, the emissions of toxic air pollutants from the stationary source or modification would not injure or unreasonably affect human or animal life or vegetation as required by Section 161. Compliance with all applicable toxic air pollutant carcinogenic increments and toxic air pollutant non-carcinogenic increments will also demonstrate preconstruction compliance with Section 161 with regards to the pollutants listed in Sections 585 and 586.

Per Section 210, if the total project-wide emissions increase of any TAP associated with a new source or modification exceeds screening emission levels (ELs) of Idaho Air Rules Section 585 or 586, then the ambient impact of the emissions increase must be estimated. If ambient impacts are less than applicable Acceptable Ambient Concentrations (AACs) for non-carcinogens of Idaho Air Rules Section 585 and Acceptable Ambient Concentrations for Carcinogens (AACCs) of Idaho Air Rules Section 586, then compliance with TAP requirements has been demonstrated. If a facility will only be located at a specific site for less than five years, then allowable impacts of Idaho Air Rules Section 586 TAPs (carcinogens) are 10 times the AACC increment in Section 586, as per Idaho Air Rules Section 210.15.

Idaho Air Rules Section 210.20 states that if TAP emissions from a specific source are regulated by the Department or EPA under 40 CFR 60, 61, or 63, then a TAP impact analysis under Section 210 is not required for that TAP.

3.0 Analytical Methods and Data

This section describes the methods and data used in analyses to demonstrate compliance with applicable air quality impact requirements.

3.1 Emission Source Data

The proposed modification only resulted in a change in SO_2 emissions. Emissions rates of other criteria pollutants and TAPs are not affected by the project. A DEQ-developed HMA emissions calculation spreadsheet to calculate emissions for their proposed increase in allowable sulfur content of oil combusted in the HMA dryer, given the specified equipment and requested operational rates. Review and approval of estimated emissions was the responsibility of the DEQ permit writer and is not addressed in this modeling memorandum. DEQ modeling review included verification that the application's potential emissions rates were properly used in the model. The rates listed represent the maximum allowable rate as averaged over the specified period.

All modeled criteria air pollutant and TAP emissions rates were equal to or greater than the facility's emissions as calculated in the HMA emissions spreadsheet.

3.1.1 Criteria Pollutant Emissions Rates and Modeling Applicability

Table 3 lists SO_2 emissions rates used in the DEQ non-site-specific modeling analyses for the HMA plant production rate and modified allowable sulfur content of oil used in the HMA dryer.

Table 3. EMISSIONS USED IN DEQ ANALYSES			
Emissions Point in Model	**Pollutant**	**Averaging Period**	**Emissions Rate (lb/hr)[a]**
DRYER – drum dryer/mixer	SO_2	1-hour	6.23
GEN1 – primary diesel fired generator	SO_2	1-hour	0.0128
GEN2 – secondary diesel fired generator	SO_2	1-hour	6.82E-4

a. Pounds per hour emissions rate used in modeling analyses for specified averaging periods.

3.1.2 Toxic Air Pollutant Emissions Rates

The proposed increase in allowable sulfur content of oil combusted in the HMA dryer does not affect any emissions of TAPs.

3.1.3 Emissions Release Parameters

Table 4 provides emissions release parameters for the analyses, including stack height, stack diameter, exhaust temperature, and exhaust velocity.

Table 4. EMISSIONS RELEASE PARAMETERS					
Release Point /Location	**Source Type**	**Stack Height (m)[a]**	**Modeled Diameter (m)**	**Stack Gas Temp. (K)[b]**	**Stack Gas Flow Velocity (m/sec)[c]**
DRYER	Point	11.4	0.83	389	21.6
GEN1	Point	4.1	0.20	500	40
GEN2	Point	2.2	0.11	500	46

a. Meters

b. Kelvin

c. Meters per second

The HMA dryer stack gas temperature was listed as 150 °F in the application, which is a carry-over from when a scrubber system was used to control emissions from the plant. In 2012 a baghouse replaced the scrubber, and the DEQ Statement of Basis supporting the PTC stated that the exhaust temperature would be 240-260 °F. Source testing information submitted with the application documented exhaust temperatures of 255-274 °F. DEQ used an exhaust temperature of 240 °F (389 K) as a conservative measure.

Material submitted with the application listed the HMA dryer fan rating at 43,000 actual cubic feet per minute (acfm) at 350 °F (450 K). When this is adjusted to 240 °F, the flow is 37,075 acfm. Assuming the fan may

typically operate at 2/3 capacity, the flow is reduced to 24,717 acfm, resulting in a flow of 21.6 meters/second from the 27-inch by 31-inch stack (equivalent to a 0.20 meter diameter stack at the release point).

3.2 Background Concentrations

Background concentrations are used in the cumulative NAAQS impact analyses to account for impacts from sources not explicitly modeled. Table 5 lists reasonably conservative background concentrations for Idaho.

Background SO_2 concentration values were obtained by using a background concentration tool developed by the Northwest International Air Quality Environmental Science and Technology Consortium (NW AIRQUEST) and provided through Washington State University (located at http://lar.wsu.edu/nw-airquest/lookup.html). The tool uses regional scale modeling of pollutants in Washington, Oregon, and Idaho, with model results adjusted by available monitoring data.

SO_2 background values were obtained for nine locations, including Pocatello, Idaho Falls, Paul, Blackfoot, Twin Falls, Rexburg, Lewiston, Boise, and Coeur d'Alene. Background values ranged from 1.5 ppb for Lewiston to 5.3 ppb for Boise. The 5.3 ppb (13.9 $\mu g/m^3$) value was used for the background concentration.

Table 5. BACKGROUND CONCENTRATIONS

3. Pollutant	Averaging Period	Background Concentration ($\mu g/m^3$)[a]
Sulfur dioxide (SO_2)	1-hour	13.9

a. Micrograms per cubic meter.

3.3 NAAQS Impact Modeling Methodology

This section describes the modeling methods used to demonstrate preconstruction compliance with applicable air quality standards.

3.3.1 General Overview of Analyses

DEQ performed non-site-specific analyses that were reasonably representative of the HMA plant, and the results demonstrated compliance with applicable air quality standards to DEQ's satisfaction, provided specified setbacks and operational restrictions are maintained. Alternatively, site-specific air impact analyses, demonstrating compliance with NAAQS and TAP increments, could be performed for those locations where the setback requirement cannot be achieved.

Non-site-specific modeling was used because of the portable nature of the HMA plant. Results of the analyses were used to establish setback distances between locations of primary emissions points and the property boundary of the HMA plant.

Table 6 provides a brief description of parameters used in the modeling analyses.

Table 6. MODELING PARAMETERS		
Parameter	**Description/Values**	**Documentation/Addition Description**
General Facility Location	portable	All locations not within non-attainment areas.
Model	AERMOD	AERMOD with the PRIME downwash algorithm, version 16216r
Meteorological Data	multiple areas	See Section 3.3.4
Terrain	not considered	Flat terrain was assumed in the analyses.
Building Downwash	considered	No substantial structures were identified in the application other than the large generator housing.
Receptor Grid	polar grid	Adequate to resolve maximum modeled impacts.

3.3.2 Modeling protocol and Methodology

A modeling protocol was not submitted to DEQ prior to the application because DEQ modeling analysts performed the analyses. Site-specific modeling was generally conducted using data and methods described in the *State of Idaho Air Quality Modeling Guideline*.

3.3.3 Model Selection

Idaho Air Rules Section 202.02 requires that estimates of ambient concentrations be based on air quality models specified in 40 CFR 51, Appendix W (Guideline on Air Quality Models). The refined, steady state, multiple source, Gaussian dispersion model AERMOD was promulgated as the replacement model for ISCST3 in December 2005. AERMOD retains the single straight line trajectory of ISCST3, but includes more advanced algorithms to assess turbulent mixing processes in the planetary boundary layer for both convective and stable stratified layers.

AERMOD version 16216r was used for the modeling analyses to evaluate impacts of the facility. This version was the current version at the time the application was received by DEQ.

3.3.4 Meteorological Data

DEQ impact analyses used processed meteorological data from numerous locations throughout Idaho. DEQ determined that NAAQS compliance is reasonably assured for all areas of Idaho with NAAQS compliance demonstrated when using the following 13 meteorological datasets: Boise, Coeur d'Alene, Twin Falls, Pocatello, Idaho Falls, Pullman (WA), Rexburg, Burley, Lewiston, Sandpoint, McCall, Aberdeen, Soda Springs (P4 site).

3.3.5 Effects of Terrain on Modeled Impacts

Terrain effects on dispersion were not considered in the non-site-specific analyses. DEQ contends that assuming flat terrain is not a critical limitation of the analyses because most emissions points associated with HMA plants are near ground-level and the immediate surrounding area is typically flat for dispersion modeling purposes. Emissions sources near ground-level typically have maximum pollutant impacts near the source, minimizing the potential effect of surrounding terrain to influence the magnitude of maximum modeled impacts.

3.3.6 Facility Layout

DEQ's analyses used a conservative generic facility layout. This was done because the specific layout will vary depending upon product needs and specific characteristics of the site and equipment. To provide conservative results, DEQ used a tight grouping of emissions sources. Sources were positioned within 7 meters of the center of the facility. The drum dryer was placed at the center of the facility. Because nearly all the SO_2 emissions occur from the dryer, the positioning of other sources relative to the dryer is of little importance.

3.3.7 Effects of Building Downwash on Modeled Impacts

The housing of the large generator was assessed for potential plume downwash effects, modeled as a 2-meter square structure, 3-meters high. No other substantial structures were identified in the application. Downwash effects from equipment or other minor structures at the site were not accounted for because much of the equipment is porous to wind, thereby minimizing downwash effects

3.3.8 Ambient Air Boundary

DEQ's non-site-specific analysis methods, using a generic facility layout, were used to generate minimum setback distances between emissions points and the property boundary or the established boundary to ambient air (if not the same as the property boundary). Ambient air is any area where the general public (anyone not under direct control of the HMA plant) has access. Compliance with NAAQS is not demonstrated unless setback distances are maintained.

3.3.9 Receptor Network and Generation of Setback Distances

A polar grid with 10-meter receptor spacing extending out to 210 meters, 25-meter spacing extending out to 400 meters, and 50-meter spacing extending out to 700 meters was used in the non-site-specific modeling performed by DEQ. To establish a setback distance, the following procedure was followed for the requested production level and operational configuration:

1) Appropriate emissions rates were modeled and background concentrations were added to the resulting impact levels.

2) For the operational configuration, pollutant, averaging period, and meteorological data set, all receptors with concentrations (modeled value plus background) equal or greater than the NAAQS

were plotted, effectively giving a plot of receptors where the standard could be exceeded for that pollutant and averaging period.

3) The controlling receptor for each pollutant, averaging period, and meteorological data set was identified. First, the receptor having a concentration exceeding the NAAQS that was the furthest from the center of the facility was identified. The controlling receptor was the next furthest downwind receptor from that point.

4) The minimum required setback distance was calculated. This was the furthest distance between the center of the facility (the drum dryer stack) and the controlling receptor.

Figure 1 shows an example of how setback distances are determined for a specific modeling run. Emissions points are grouped in a cluster at the center within a 10.0-meter square area. The inner contour line shows the extent of modeled concentrations exceeding the 24-hour $PM_{2.5}$ NAAQS. The outer-most contour line shows modeled 1-hour NO_2 design value concentrations that exceed the NAAQS. The point on the contour line that is the furthest from the drum dryer stack is identified, and then the controlling receptor is identified as the next furthest receptor beyond that point. The setback distance is determined from the coordinates of the controlling receptor.

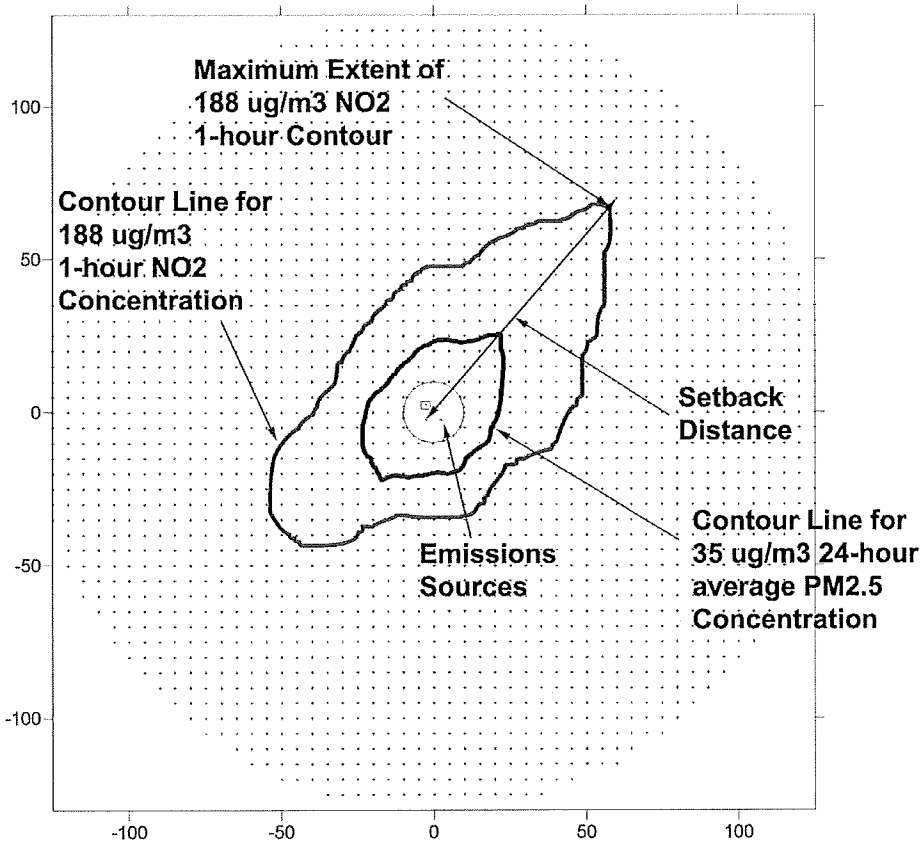
3.3.10 Crucial HMA Plant Characteristics Affecting Air Quality Impacts

Table 7 lists characteristics of the HMA plant that are critical to the NAAQS and TAPs compliance demonstrations.

Table 7. IMPORTANT CHARACTERISTIC OF HMA PLANT USED IN DEQ ANALYSES

Parameter	Value or Description
HMA Throughput Rates	350 ton/hour, 3,600 ton/day, 350,000 ton/year (unchanged from existing permit)
Drum Dryer	Drum dryer fueled by natural gas, propane, diesel, or used oil with a baghouse for emissions control. The sulfur content in used oil will not exceed 0.1 percent.
Dryer Stack Parameters	Stack height ≥37.5 feet, stack diameter ≈ 2.6 feet, gas temp ≥ 240° F, flow velocity ≥70 ft/sec.
Seasonal Restriction	None were assessed.

Figure 1 - Determination of Setback Distance for a Modeling Run



4.0 Results for SO_2 NAAQS Cumulative Impact Level Analyses

DEQ calculated required setback distances from the non-site-specific modeling results for SO_2. Setback distances are the closest allowable distance between the property boundary and the center of the facility, which is set to be the drum dryer stack location.

The existing PTC for the HMA plant has an 80-meter (262 feet) setback for production of 3,600 ton HMA/day and 350,000 ton HMA/year. This setback is driven by 24-hour PM_{10} impacts. DEQ's analyses of modified SO_2 emissions, from increasing allowable sulfur content of used oil combusted in the HMA dryer, evaluated whether an increase in the existing setback is needed to assure compliance with the 1-hour SO_2 NAAQS.

Three different sulfur content levels were assessed for SO_2 impacts by DEQ. Table 8 shows the setbacks needed to assure compliance with the 1-hour SO_2 NAAQS. Use of used oil with a sulfur content above 0.1 percent resulted in substantial setbacks. A sulfur content of 0.1 percent or less did not require a setback to assure compliance; however, the existing setback of 80 meters is still needed to assure compliance with the other

NAAQS. Table 9 shows required setback distances needed to assure SO_2 NAAQS compliance for specific meteorological datasets.

Table 8. SETBACK DISTANCES NEEDED TO ASSURE SO_2 NAAQS COMPLIANCE

HMA Configuration Scenario	Setback
Used oil with a sulfur content of 0.20 percent by weight	325 meters (1,066 feet)
Used oil with a sulfur content of 0.15 percent by weight	150 meters (492 feet)
Used oil with a sulfur content of 0.10 percent by weight	none needed[a]

[a] An 80-meter (262 feet) setback is still needed to assure compliance with other NAAQS.

Table 9. NEEDED SETBACKS FOR SPECIFIC METEOROLOGICAL DATASETS

Meteorological Dataset used in the Analyses	Setback Distances (meters) for Specified Sulfur Content of Oil (percent)[a]		
	0.2%	0.15%	0.1%
Boise	275	none	none
Pocatello	275	none	none
Coeur d'Alene	250	none	none
Lewiston	250	none	none
Twin Falls	275	none	none
Idaho Falls	275	none	none
McCall	210	none	none
Sandpoint	275	none	none
Pullman WA	275	none	none
Burley	none	none	none
Aberdeen	250	none	none
Soda Springs (data from the P4 facility)	325	150	none
Rexburg	275	none	none

[a] This is the setback needed to assure compliance with the 1-hour SO_2 NAAQS. Where "none" is listed, a setback of 80 meters is still needed to assure compliance with other NAAQS.

5.0 Conclusions

The ambient air impact analyses and other air quality analyses submitted with the PTC application demonstrated to DEQ's satisfaction that SO_2 emissions from increasing the allowable sulfur content of oil combusted in the HMA dryer to 0.1 percent will not cause or significantly contribute to a violation of the 1-hour SO_2 NAAQS.

APPENDIX D – FACILITY DRAFT COMMENTS

The following comments were received from the facility on October 4, 2017:

Facility Comment: Permit Condition 2.5 currently does not exclude the Joplin site from relocation requirements as previous and current facility permits have allowed and should be updated to do so.

DEQ Response: The Permit Condition has been modified to exclude the Joplin site from relocation requirements.

Facility Comment: Permit Condition 2.6 currently does not exclude the Joplin site from Non-Attainment area operation requirements as previous and current facility permits have allowed and should be updated to do so.

DEQ Response: The Permit Condition has been modified to exclude the Joplin site from Non-Attainment area operation requirements.

Facility Comment: Permit Condition 3.9 definition of setback does not match analogous previous permit conditions and should be updated to do so.

DEQ Response: The language used to define set back in previous permit conditions was found to be contradictory and open to varied interpretation. The definition of setback in Permit Condition 3.9 conforms to the standard interpretation for mobile sources and will not be changed. See Permit Condition Review section above for expanded explanation.

Facility Comment: Permit Condition 3.17 language does not allow for RAP record keeping on a daily basis. Since the facility operates as a continuous production HMA plant per batch record keeping is not possible. The Permit Condition should be updated to allow daily monitoring of RAP.

DEQ Response: The Permit Condition has been modified to allow RAP monitoring on a daily or per batch basis.

The following comments were received from the facility on October 18, 2017:

Facility Comment: With regards to Permit Condition 3.8 the use of reprocessed asphalt shingles (RAS) in a similar fashion to RAP is becoming more common in HMA plant operation. The Permit Condition could also be updated to allow for the use of RAS.

DEQ Response: The use of RAS has not been included in permit language due to Asbestos concerns. In limited cases asphalt shingles have historically been manufactured to include Asbestos. As a federally regulated HAP with applicable NESHAP regulation 40 CFR 61 Subpart M, the emissions impact of Asbestos has not been fully vetted by Idaho DEQ. Additionally, to do so would be outside the scope of the current permitting project.

APPENDIX E – PROCESSING FEE

PTC Processing Fee Calculation Worksheet

Instructions:
Fill in the following information and answer the following questions with a Y or N. Enter the emissions increases and decreases for each pollutant in the table.

Company:	**Central Paving INC.**
Address:	**5040 S. Apple**
City:	**Boise**
State:	**ID**
Zip Code:	**83715**
Facility Contact:	**Terry McEntee**
Title:	**President**
AIRS No.:	

N Does this facility qualify for a general permit (i.e. concrete batch plant, hot-mix asphalt plant)? Y/N

Y Did this permit require engineering analysis? Y/N

N Is this a PSD permit Y/N (IDAPA 58.01.01.205.04)

Emissions Inventory			
Pollutant	Annual Emissions Increase (T/yr)	Annual Emissions Reduction (T/yr)	Annual Emissions Change (T/yr)
NO_X	0.0	0	0.0
SO_2	2.5	0	2.5
CO	0.0	0	0.0
PM10	0.0	0	0.0
VOC	0.0	0	0.0
TAPS/HAPS	0.0	0	0.0
Total:	0.0	0	**2.5**
Fee Due	**$ 2,500.00**		

Comments: